PEVRBACHII

TRACTATVS

· 1541 ·

$1250 -39

TRACTATVS GEORGII PEVRBACHII SVPER PROPOSITIONES PTOLE maei de Sinubus & Chordis.

Item Compositio Tabularum Sinuum per Ioannem de Regiomonte.

Adiectæ sunt & Tabulæ Sinuum duplices per eundem Regiomontanum.

Omnia nunc primum in utilitatem Astronomiæ studiosis impressa.

Norimbergæ apud Iohan. Petreium, anno Christi M. D. XLI.

HIERONYMO SCHREIBERO Rerum Mathematicarum ſtudioſo, amico ſuo, Ioannes Schonerus Caroloſtadius Mathematicus S. D. P.

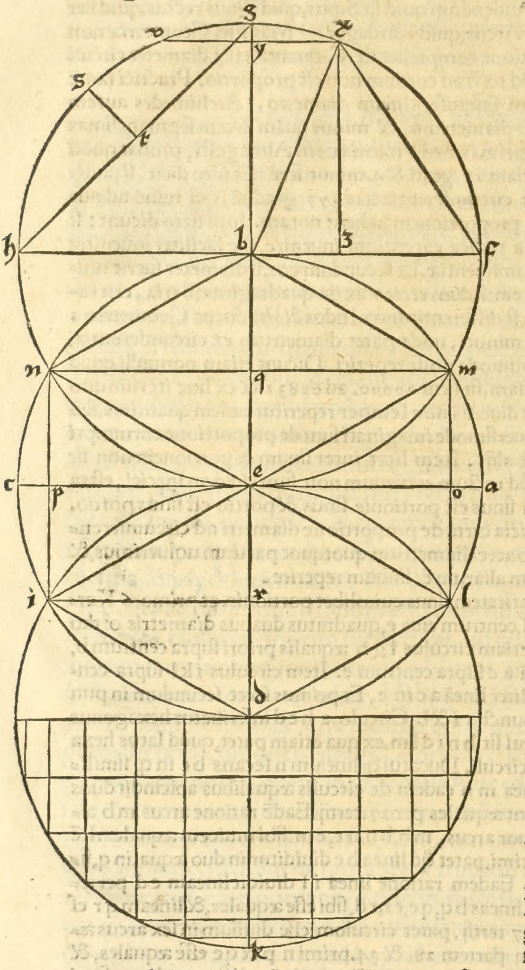
CONTINERE me non poſſum, doctiſsime Hieronyme, quin ſæpe illum animi tui, iam pridem cognitum mihi, candorem in memoriam reuocem: præterquàm enim quòd me ſemper ſingulari proſequutus es amore, etiam à ſtudijs noſtris uerè cœleſtibus, nunquàm abhorrente uiſus es ingenio, quod unum, maximè perpetuæ inter nos amicitiæ uincula cuſtodire debet. Quare cum mecum conſtituiſſem, hoc potiſsimum tempore in publicum edere, librum Ioannis Regiomontani uiri citra controuerſiam, ſua tempeſtate, Mathematicorum omnium principis, cui titulum fecit ille de Sinubus & Chordis, quibus ad maiorem utilitatem & facilitatem, compoſitionẽ quoqꝫ tabularum eorũdem Sinuũ, artificioſe equidem adiecit: eum librũ nominatim tibi dicare uolui, cũ quòd rebus Aſtronomicis non tantũ utilia, ſed & neceſſaria uiſa mihi ſint omnia, quæ nobis Regiomontanus noſter ſcripta reliquit, tum etiam quòd hic liber recta ducat ad cognitionẽ ſiue intelligentiam librorum, quos idem Regiomõtanus de Triangulis Sphæricis conſcripſit. Sunt præterea in hoc libro præclara multa, ſine quibus, in Aſtrorũ ſcientia, alijsqꝫ Mathematicis diſciplinis, haud facile excellere poterit quiſqꝫ. Quocirca admiratione dignum eſt, fuiſſe quoſdam qui huius doctiſsimi uiri labores, tanquàm ingenij ſui fœturas, ſui nominis inſcriptione, ſuppreſſo interim nomine Regiomontani publicare non erubuerint, ſecus facientes, quàm facere decet bonos uiros. Mihi quod facio, conſcientia ſatisfacit, neqꝫ alienis plumis ornatus alijs placere uolui aut ſtudui unqꝫ. Scripſit eiuſdẽ argumenti librũ, uir doctiſsimus Georgius Peurbachius, præceptor olim Regiomontani noſtri, quem in præſentia huic editioni adiecimus, cum quòd diſcipulum cum magiſtro ſuo conferre pulchrum eſſe putamus, tum quòd omnes bonarum artium ſtudioſos, ad horum uirorum inuentiones, ut ſedulo legant, inuitarẽ. Id uolui ne ignorarent ſtudioſi. Ipſe hoc potiſsimũ ago in hac editione, ut Regiomontano, à quo in hiſce ſtudijs meis nõ parum ſum adiutus, tanquàm ueteri colono, ſui reſtituantur agri. Quam uoluntatem, nemo eſt, opinor, inter doctos, qui improbare uelit. Vale in Domino, & ſtudia noſtra excelſo animo proſequi non graueris Norimbergæ anno Chriſti 1541.

TRACTATVS SINVVM ET Chordarum, Georgij Peurbachij.

SINVVM, Chordarũ & Arcuum noticia ad cœlestium motuum cognitionem perualde necessaria existit, ideò de eorum doctrina restat in præsenti perquirendum. Vnde uidendum quid sit Sinus, quid Sinus rectus, quid uersus, quid Chorda, quid Arcus, quid Kardaga. Magistri Geometriæ non potuerunt perfecta ratione comprehendere, quanta esset diameter circuli respectu suæ circumferentiæ, eo quòd recti ad curuum non est proportio. Practici tamẽ posuerunt circumferentiam triplam sesquiseptimam diametro. Archimedes autem probat circumferentiam cõtinere ter diametrum, & minus quàm decem septuagesimas & plus quàm decem septuagesimas primas. Sed Ptolemæus in Almagesti, probat quòd decima circumferentiæ habet chordam 27. grad. & 4. minut. ferè. Et ideo dicit, si ponimus diametrum 150 graduum, erit circumferentia ferè 377 graduũ, qui nunc ad numerum graduum diametri nullam proportionem habent notam. Indi uero dicunt; si quis sciret radices numerorum recta radice carentium inuenire, ille faciliter inueniret quanta esset diameter respectu circumferentiæ. Et secundum eos, si diameter fuerit unitas, erit circumferentia radix de decem; si duo, erit radix de quadraginta; si tria, erit radix de nonaginta, & sic de alijs. Et est differentia inter Indos & Practicos Geometriæ 1 minut. & plusq; septima pars unius minuti, unde patet diametrum ex circumferentia, & circumferentiã ex diametro diuersimode posse reperiri. Dicunt etiam nonnulli quòd proportio diametri ad circumferentiam, sit sicut 20000. ad 62832. & ex hoc iterum uno noto alterũ reperitur. Sed his modis diuersis non semper reperitur eadem quantitas, sed diuersa, secundum quòd auctores diuersimode imaginati sunt de proportione eorum. primus tamen modus communior est alijs. Item licet inter sinum & portionem non sit proportio proprie loquendo, eo quòd rectum et curuum non sunt eiusdem speciei, est tamen inter eos mutua relatio, nam sinus est portionis sinus, & portio est sinus portio. Quanquam igitur non sit nobis noticia certa de proportione diametri ad circumferentiam, possumus tamen ad placitũ ponere diametrum quotquot partium uoluerimus, & secundum eas quantitates chordarum aliarum & sinuum reperire.

Ad demonstrandum igitur quantitatem sinus cuiuslibet portionis. et primo 6 Kardagarum circuli. Sit circulus a b c d, centrum eius e, quadratus duabus diametris orthogonaliter se secantibus a c, b d. Sit etiam circulus f g h æqualis priori supra centrum b, cuius circumferentia contingit lineã a c supra centrum e. Item circulus i k l supra centrũ d, æqualis priori, cõtingens similiter lineã a c in e. Et primus secet secundum in punctis m & n, & secũdus tertium in punctis i & l. Circulo a b c d inscribatur hexagonus æquilaterus per penultimã quarti, qui sit b n i d l m, ex qua etiam patet, quòd latus hexagoni talis est æquale semidiametro circuli. Ducaturq; linea m n secans b e in q, similiter i l secans e d in e. Quia igitur linea m n eadem de circulis æqualibus abscindit duos arcus, scilicet m b n & n e m, ipsi erunt æquales per 27. tertij. Eadẽ ratione arcus m b æqualis erit arcui m e. Eruntq; quatuor arcus, m b, b n, n c, c m, sibi inuicem æquales. Itẽ per octauã primi uel quartã & 26 primi, patet q̃d linea b e diuiditur in duo æqua, in q, similiter n m diuiditur per æqua in q. Eadem ratione linea i l diuidit lineam e d per æqua, & econtra. Et ita patet quatuor lineas b q, q e, e r, r d, sibi esse æquales, & lineam q r esse æqualem semidiametro, & per 27 tertij, patet circulum esse diuisum in sex arcus æquales. Item per quartam secundam partem 28. & 34. primi n p & q e esse æquales, & n q & p e similiter æquales, & ita n p erit quarta pars diametri circuli siue medietas semidiametri, unde sinus duodecimæ partis circuli siue 30 gra. erit quarta p̃s diametri, & ita notus est sinus duarum Kardagarũ simul. Linea autem n q est sinus rectus quatuor Kardagarum siue sextæ partis circuli, & ipsa nota erit per penultimam primi, eo quòd e q est nota, similiter e n. Postea in circulo f g h protrahe diametrum f h orthogonaliter secantẽ g e in centro b, & ducta linea g h, quam per undecimam primi, diuide per æqua

in t, similiter arcum g h per 29 tertij per æqua in s. Tunc arcus g s erit octaua circuli siue 45 grad. quæ sunt tres Kardagæ, & cuius sinus g t notus erit per penultimam primi. quadratū g h duplū est ad quadratum semidiametri, unde sinus totus est quadrandus, & postea dupli eius radix quadrata erit linea g h, cuius medietas est g t, sinus trium Kardagarum siue 45 gra. Patet a m esse 30. grad. & eius chorda erit nota, subtrahendo



e o, quæ est æqualis n q sinui 60 gradū, ab e a sinu toto, & manebit o a cuius quadratum iungatur cū quadrato m o, scilicet sinus 30. grad. & producti radix erit chorda quæsita, cuius medietas est sinus primæ Kardagæ siue 15. grad. Deinde in circulo f g h accipiatur portio 30. grad. quæ sit u g x, ita quòd u g sit 15. gra, similiter g x 15. grad. & erit arcus x f 75. grad. Duc ergo p 31. primi, lineam x z æquædistantem lineæ g b, quæ erit sinus portionis x f 75. grad. Ductaq; linea b x à quadrato semidiametri, scilicet b x, aufer quadratum sinus portionis 15. gra. scilicet lineæ y x, & manebit quadratum lineæ y b, quæ est æqualis lineæ x z, erit ergo sinus portionis 75. gra. notus, & est sinus 5. Kardagarum. Sinus autem totus siue semidiameter est sinus sex Kardagarum.

Habitis igitur sinibus sex Kardagarum, minue sinū arcus 15. gra. de sinu arcus 30. gra. & residuum erit sinus Kardagæ secūdæ. Deinde subtrahe sinum duarum Kardagarum, hoc est arcus 30. grad. à sinu arcus trium Kardagarum, & remanebit sinus tertiæ Kardagæ, & ita de cæteris. Ex his igitur manifesta est quantitas tam sinus recti q̃ uersi cuiuslibet Kardagæ, & quarumlibet simul sumptarū. Nam sinus rectus primæ Kardagæ est sinus uersus sextæ, & sinus rectus secundæ est sinus uersus quintæ &c. Item sinus rectus duarum Kardagarum primarum, scilicet primæ et secundæ, est sinus uersus duarum ultimarum, scilicet quintæ & sextæ. Et sinus uersus primarum duarum, est sinus rectus duarum ultimarum. Hæc siquidem sunt sex Kardagæ gratia, quarum introducta est hæc demonstratio.

Ad inueniendum autem sinus minorum circuli portionum, Sinum sextæ Kardagæ multiplica per sinum arcus 30. grad. & producti radix erit sinus arcus 7. grad. & dimidij. Quem in se multiplicatū aufer à quadrato totius sinus, & remanentis radix erit sinus 82. & dimidij grad. Hunc minue à toto sinu, & residuum multiplica per sinum 30. gra. & proue-

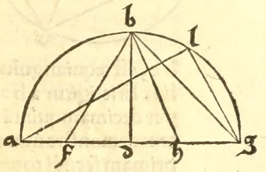
& prouenientis radix erit ſinus arcus 3.grad.& trium quartarum. Et quadratum huius aufer de quadrato totius ſinus, & reſidui radix erit ſinus 86.grad.& unius quartæ. Poſt ſubtrahe ſinum 45.grad. de toto ſinu, reſiduum multiplica per ſinum arcus 30.grad.& collecti radix erit ſinus arcus 22.grad.& dimidij, cuius quadratum minue de quadrato totius ſinus,& radix remanentis erit ſinus arcus 67.grad.& dimidij. Quem aufer de ſinu toto,& remanens multiplica per ſinum 30.grad.& excreſcentis radix erit ſinus arcus 11.grad.& 15.minut.cuius quadratũ minue à quadrato totius ſinus, & radix reſidui erit ſinus portionis 78.grad.& 45.minut. Poſt hæc deme ſinum 15.grad.de ſinu toto, & reſiduum multiplica per ſinum 30.grad.& numeri producti radix erit ſinus portionis 37. grad.& 30.minutorum,cuius quadratum ſubtrahe à quadrato totius ſinus,radixq́ reſidui erit ſinus 52.grad.& dimidij. Eodem modo fit in uniuerſis circuli portionibus, uſq; ad minutiſsimas eius portiones. Hæc de mente Arzahelis.

Nunc ſecundum ſententiam Ptolemæi in prima dictione Almageſti,9.& 10.capit. uidendam eſt de inuentione chordarum, præmittit autem primo ſex propoſitiones.

PROPOSITIO PRIMA.

Data circuli diametro,latera decagoni, hexagoni, pentagoni, tetragoni atq; trianguli æquilateri, omniũ ab eodem circulo circumſcriptorũ reperire.

Sit ſemicirculus a b g erectus ſupra diametrum a d g, circumductus ſupra centrum d, & ſit d b perpendicularis à centro ſup a g per undecimã primi,et ſemidiameter d g in duo media diuiſa in h per decimam primi, & ducta linea b h, ſitq́ h f, æqualis h b per tertiã primi, & protrahatur linea b f. Dico quòd linea b d, ſimiliter d g, eſt latus hexagoni, & f d latus decagoni,& f b latus pentagoni. Primũ patet per corollariũ penultimæ quarti. Secundum ſic:Nã g d diuiditur in æqualia in h,& additur ei in lõgum d f. Igitur per ſextam ſecundi, quòd fit ex g f in f d,cum quadrato d h æquatur quadrato h f. igitur & quadrato h b,unde etiã per penultimã primi quadratis, quadratũ duarũ linearũ b d & d h. Dempto igitur quadrato d h cõmuni, erit quòd ex g f in f d æquale quadrato d b ſiue d g,igitur per ſecũdam partem decimæſextæ ſexti, tres lineæ f g, g d, & d f continue proportionales erunt. Eſtq́ etiam linea g f diuiſa in d ſecundum proportionem habẽtem medium & duo extrema,cuius maior portio g d eſt latus hexagoni,igitur per conuerſam nonæ decimitertij,linea d f erit latus decagoni æquilateri circulo inſcripti,& hoc eſt ſecundum. Tertium uero ſic: Nam angulus d eſt rectus,igitur per penultimam primi,quadratum b f æquatur duobus quadratis b d & d f,ſed b d eſt latus hexagoni,& d f latus decagoni,ut patuit. Igitur per conuerſam decimæ decimitertij b f erit latus pentagoni.Nam latus pentagoni æquilateri per eandem decimã decimi tertij,tanto potentius eſt latere hexagoni,quantũ potentius latus decagoni æquilateri, ſi ſint eidẽ circulo oẽs inſcripti.Latus uero tetragoni æqlateri, inuenitur ſi in priori ſemi circulo ducatur linea b g.Nam linea d b diuidit ſemicirculum in duo media,erit igitur arcus b g quarta circumferentiæ circuli,unde per quartam ſexti,b g linea erit latus quadrati &c.Latus autem trigoni æquilateri circulo inſcripti,habebitur ſi intra eundem ſemicirculum coaptetur linea recta g l æqualis ſemidiametro g d per primam quarti, quæ tangat diametrũ a g in termino eius .ſ. g, ipſaq́ erit latus hexagoni,& ducatur linea a l, dico quòd ipſa erit latus trigoni æquilateri circulo inſcripti. Nam latus g l hexagoni abſcindit de ſemicirculo arcum g l,qui erit ſexta pars circumferentiæ totius circuli,ſcilicet 60.grad. erit igitur arcus a l reſiduus complementum ſemicirculi,ſcilicet 120.grad.et ipſum eſt tertia pars circuli.Eius igitur chorda erit latus trigoni p 28.tertij. Et ita patet tota ꝓpoſitio. Corollariũ ex hoc. Vnde manifeſtũ eſt,quòd ſi nota fuerit circuli diameter, & prænominata latera nota erunt,chordæ quoq; quæ reſiduis ſemicirculi arcubus



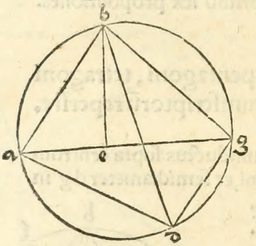
subtenduntur, erunt notæ, patet ex ipsa demõstratione prima pars, sed secunda patet ex 30. tertij & 46. primi.

¶ Cuiuscunq; arcus sinus uersus, se habet ad sinum rectum medietatis arcus, sicut idem sinus rectus se habet ad sinum arcus 30. graduum. Hoc est dicere: Cuiuslibet arcus in quarta circuli sinus rectus, est medio loco proportionalis, inter sinum uersum arcus dupli, & sinum rectum arcus 30. graduum.

PROPOSITIO II.

Si quadrilaterum infra circulum describatur, rectangulum quod sub duabus eius diametris continetur, est æquale duobus rectangulis pariter acceptis, quæ sub utrisq; eius lateribus oppositis continentur.

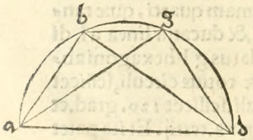
Sit circulus a b g d, in quo describam quadrilaterum a b g d, & eius duas diametros a g, b d. Dico quòd rectangulum q̃d fit ex a g in b d, est æquale duobus quæ fiunt ex a d in b g, & a b in d g, simul acceptis. Faciam enim per 23. primi angulum a b e, æqualem angulo g b d. Adiectoq; utriq; eorum angulo e b d, erit angulus a b d æqualis angulo g b e. Sed per 20. tertij angulus b g e, æquatur angulo b d a. Igitur per secundam partẽ tricesimæsecũdæ primi, residuus angulus b e g, erit æqualis residuo angulo b a d, sunt igitur trianguli æquianguli, igitur per quartã sexti latera æquos angulos respicientia, proportionalia erunt, unde a d est ad e g, sicut b d ad b g, ergo per decimãquintam sexti, q̃d fit ex a d in b g, æquatur ei quod fit ex e g in b d. Item angulus a b e per hypothesim æquatur angulo d b g, sed per 20. tertij angulus b a e, æquatur angulo b d g. Igitur per secundam partem 32. primi tertius angulus tertio est æqualis, unde triangulus a b e, est æquiangulus triangulo d b g, igitur per quartam sexti latera erunt proportionalia. Erit igitur a b ad b d, sicut a e ad d g, & permutatim a b ad a e, sicut b d ad d g, ergo per decimamquintã sexti, quod fit ex a b in d g, est æquale ei quod fit ex a e in b d. Iam autem demonstratum est, quod fit ex a d in b g, est æquale ei quod fit ex e g in b d. Igitur p̃ primam secũdi totum rectangulum, quod fit ex ductu a g in b d, æquatur duobus rectangulis, quorum unum fit ex a d in b g, & aliud ex a b in d g. Nam quod fit ex a g in b d, æquatur duobus rectangulis per primã secundi, scilicet uni q̃d fit ex b d in e g, & alij quod fit ex b d in a e, simul sumptis. Sed primum rectangulum æquatur ei quod fit ex a d in b g, & aliud ei quod fit ex a b in d g, unde quod fit ex a g in b d, est æquale duobus rectangulis, scilicet ei quod fit ex a d in b g, & illi quod fit ex a b in d g, simul sumptis, quod est propositum.



PROPOSITIO III.

Si in semicirculo chordæ arcuum inæqualiũ notæ fuerint, chorda quoq; arcus quo maior minorem superat, erit nota.

Sint in semicirculo a b g d supra diametro a d, descripto duæ chordæ a b & a g notæ. Dico quòd chorda arcus b g nota erit. Ductis enim duabus chordis b d & g d, quæ cum duæ a b & a g sint notæ, erit manifestum per corollarium primæ huius, eo quòd quælibet earum est chorda residui semicirculi. Est igitur quadrilaterum a b g d infra circulum, cuius duæ diametri a g & b d sunt notæ, tũc per præmissam duo recta simul, quæ fiunt ex a b in g d, & ex b g in a d nota erunt. Rectangulum autem quod fit ex a b in g d, est notum, eo quòd ambæ lineæ ipsum rectangulum continentes sint notæ, quo ablato de totali rectangulo, quod fit ex a g in b d, manebit rectangulum quod fit ex b g in a d, &



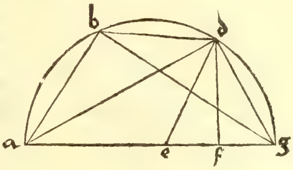
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quia una eius linearum ipsum continentium est nota, quia a d diameter circuli erit per diuisionem, reliqua linea scilicet b g nota, quod est propositum.

PROPOSITIO IIII.

Si in semicirculo alicuius arcus chorda nota fueritc, horda quoque quæ eius medietati subtenditur nota erit.

Si in semicirculo a b g descripto supra diametro a g, arcus b g chordam notam habens, diuiso arcu b g per æqua per 29. tertij, & ductis chordis a b, b d, a d & d g, ducatur perpendicularis d f supra diametrum per 12. primi. Dico quòd linea f g est medietas superflui lineæ a g super lineam a b. Pono enim lineam d e æqualem lineæ a b per tertiam primi, & produco d e. Et quia a b est æqualis a e, posita a d cõmuni, erunt duæ lineæ a b & a d trianguli a b d, æquales duabus lineis a e & a d trianguli a e d, quæli bet uidelicet suæ relatiuæ, & arcus b d æqualis arcui d g, et per 26. tertij, angulus b a d æqualis angulo e a d, igitur per quartam primi basis b d æqualis basi e d. Et quia linea b d per 28. tertij, est æqualis lineæ d g. Igitur d g est æqualis d e, igitur per quintam primi, trianguli d e g anguli supra basim sunt æquales.

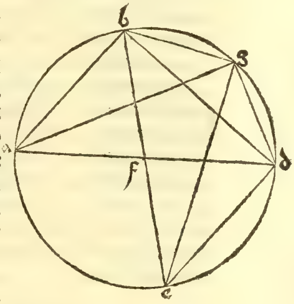


Quare d f linea demissa per 26. primi, diuidit e g in æqualia. Tota autem e g est superfluum lineæ a g super a b, & f g est medietas superflui, & ita patet quod dictum est. Et quia chorda arcus b g est nota ex hypothesi, erit chorda residui semicirculi, quæ est linea a b nota, quæ est æqualis a e, erit igitur e g nota, & per consequens eius medietas f g. Quia ergo per 30. tertij, angulus a d g in semicirculo consistens est rectus, & ab eo super basim egreditur d f perpẽdicularis, erit d g per octauam sexti, medium proportionale inter a g & g f, sed cum a g & g f sint nota, una ducta in aliam erit quadratum lineæ d g notum & per consequens ipsa linea.

PROPOSITIO V.

Si duæ chordæ duorum arcuum in semicirculo fuerint notæ, chorda quoque quæ toti subtenditur arcui ex illis duobus arcubus composito erit nota.

Circuli cuius diameter a d, & centrum f, sint duo arcus noti a b & b g notas chordas habentes, & sit una chorda alteri copulata in b, & protracta chorda a g, dico quod ipsa chorda a g nota erit. Protraho enim diametrum b f e, & lineas b d, d g, d e, & g e. Tunc enim ex noticia lineæ b g nota erit linea g e, & ex noticia a b, nota erit b d, & ex noticia b d scietur d e. Est ergo quadrilaterum b g d e circulo inscriptum, cuius sunt duo diametri b d & g e, per secundam huius rectangulum quod fit ex eis, erit æquale duobus rectangulis, quorum unum fit ex b e in g d, & a d ex b g in d e, quia igitur diametri sunt noti, erũt illa duo rectangula nota, sed unum eorum rectangulorum notum est, eo quòd b g & d e sunt notæ, erit aliud rectangulum notum, scilicet quod fit ex b e in g d, & quia unum eius latus est notum, scilicet diameter b e, erit per diuisionem ipsius rectanguli per diametrum linea g d nota, qua nota per Corollarium primæ huius erit g a nota, nam ipsa est residui arcus de semicirculo chorda. Vel aliter & facilius, quia chordæ e g & e d sunt notæ, erit per tertiam huius chorda g d nota, unde & a g similiter nota erũt. Et nota quòd chorda e d est æqualis chordæ a b, quia utraque eorum est chorda residui de semicirculo ultra arcum b d.

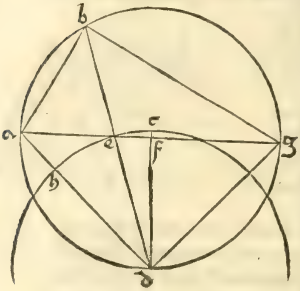


Proposi-

PROPOSITIO VI.

Si protrahantur in circulo duo lineæ inæquales, proportio chordæ longioris ad chordam breuiorem, erit minor proportione arcus longioris ad arcum breuiorem.

Sint in circulo a b g d protractæ duæ chordæ, minor a b, & longior b g. Dico quòd proportio chordæ b g ad chordam a b, est minor proportione arcus b g ad arcum a b. Diuidam enim angulum a b g per æqualia secundum nonã primi, per lineam b d, eritq́ per 25. tertij arcus a b g d æqualis arcui d a b g, super quos ipsi anguli æquales cadunt.



Dempto igitur arcu a b g cõmuni utriq́, manebit arcus a d æqualis arcui d g, eritq́ per 28. tertij linea d a æqualis lineæ d g, & per 5. primi anguli d a g & d g a supra basim æquales. Et à puncto d duco super a g perpendicularem d f per 12. primi, eruntq́ per 26. primi, a f & f g æquales, & angulus a d f æqualis angulo g d f, & perconsequens linea g e erit maior linea e a. Et quia angulus e f d rectus est, igitur maior angulorũ eiusdem trianguli, erit per 18. primi d e maior d f. Angulus autem a e d extrinsecus per 32. primi, maior est angulo recto, igitur per 18. primi, a d longior e d. Est ergo a d longior e d, & e d longior d f, circulus descriptus super d secundũ quãtitatẽ lineæ d c proculdubio lineã ad secabit, sed lineã f nõ attinget. Circũducto igitur sup̃ d circulo h e c, secãte d a in h, & ducta d f usq́ ad c, sector e d c erit maior triangulo e d f, & triangulus a d e est maior sectore h d e. Igitur per primã partẽ octauæ quinti Euclidis, proportio trianguli e d f ad sectorem h d e, est minor proportione sectoris e d c ad sectorem h d e. Et per secundam partem eiusdem proportio trianguli e d f ad triangulum a d e, est minor proportione eiusdem trianguli ad sectorem h d e. Quare per cõmunem animi conceptionem, Quicquid est minus minore, est etiam minus maiore, erit proportio trianguli e d f ad triangulum a d e, minor proportione sectoris e d c ad sectorem h d e. Proportio autem trianguli e d f ad triangulum a d e, per primam sexti, est sicut proportio lineæ e f ad lineam e a. Proportio uero sectoris e d c ad sectorem h d e, est sicut arcus e c ad arcũ e h, quæ est sicut anguli f d e ad angulum a d e per ultimam sexti, igitur proportio lineæ f e ad lineam e a, est minor proportione anguli f d e ad angulum e d a, igitur coniunctim proportio lineæ f a ad lineam e a, est minor proportione anguli f d a ad angulum a d e. Quare proportio lineæ duplæ prædictæ lineæ a f, quæ est lineæ a g, ad lineam a e, minor erit proportione anguli e d a, qui est duplus a d f ad angulum a d e. Ergo disiunctim proportio lineæ g e ad lineam a e, minor erit proportione anguli g d e ad angulum e d a. Et quia in triangulo a b g linea b e ducta ab angulo a b g, ad basim a g, diuidit eundem angulum per æqua, erunt per tertiam sexti duæ partes ipsius basis, scilicet g e & e a, reliquis eiusdem trianguli lateribus, scilicet lineis b g & b a proportionales. Igitur proportio lineæ g e ad e a, est sicut proportio chordæ g b ad chordam b a, & proportio anguli g d b ad angulum b d a per ultimam sexti, est sicut arcus g b ad arcum b a, quare proportio chordæ b g ad chordam b a, est minor proportione arcus b g ad arcum b a, quod erat demonstrandum.

Ex præmissis propositiõibus cuiuslibet arcus noti quãtitas chordæ repitur.

Ex prima enim propositione nota est chorda sextæ partis circuli, eo ꝙ ipsa æqualis semidiametro, Nota est etiã chorda decimæ partis circuli .s. arcus 36. gra. nã ipsa est latus decagoni. Nota est similiter chorda quintæ partis circuli, eo ꝙ ipsa est latus pentagoni, & ipsa est chorda arcus 72. gra. Similiter chorda arcus 90. gra. ipsa enim est latus quadrati. Item chorda 120. gra. quia latus trigoni.

Amplius

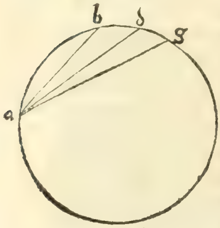
Amplius ex sequentibus propositionibus constat, ex certorum arcuum differentijs chordas multas posse inueniri. Per secundam enim propositionem & tertiam possunt inueniri plures chordæ superfluæ arcuum, secundum seipsas chordas notas habentium. Et hoc taliter: Propositis nanque chordis duabus arcuum inæqualium notis, si uis inuenire chordam arcus, quo maior excedit minorem. Primo scias chordas arcuum residuorum semicirculi respectu utriusque chordæ propositæ, subtrahendo quadratum chordæ propositæ à quadrato diametri, & manebit quadratum chordæ residui arcus semicirculi ultra arcum chordæ propositæ, per Corollariū primæ huius, cuius radix ostendit quantitatē talis chordæ. Illud autem quod fit ex ductu chordæ arcus maioris in chordam residui arcus minoris, est æquale illis duobus, quæ fiunt ex ductu chordæ arcus minoris in chordam residui arcus maioris, & ex ductu diametri in chordam arcus, quo maior excedit minorē, ut potest deduci ex tertia propositiōe. Subtracto igitur eo quod fit ex ductu chordæ arcus minoris in chordam arcus residui maioris remanet, quod fit ex ductu diametri in chordam arcus quo maior minorē excedit. Quod si diuiditur per diametrū, exibit ipsa chorda arcus quo maior excedit minorē. Ita per chordam arcus 60. gra. & chordam arcus 72. gra. inuenies chordam arcus 12. gra. Item per chordam arcus 36. gra. & per chordam arcus 60. gra. reperies chordam arcus 24. gra. Item per chordam arcus 60. gra. & chordam arcus 90. gra. inuenies chordam arcus 30. gra. Sicque de cæteris similibus debes operari, & chordas multorum arcuum habebis.

Consequenter ex quarta habetur, qualiter habita chorda alicuius arcus inueniri queat chorda medietatis eiusdem arcus, ut ex chorda arcus 12. gra potest reperiri chorda arcus 6. gra. Deinde arcus trium, post arcus 1. grad. cum dimidio. Deinde arcus dimidij gra. & 4. Primo debet quæri chorda residui talis arcus p Corollariū primæ huius, qua ablata à diametro residui medietas ducatur in diametrum, & producti radix est chorda quæsita, nā ipsa est chorda medietatis arcus ꝓpositi. Et ita potes ex chorda 60 gra. reperire chordā arcus 30. gra. dupliciter, p præcedētē & illam. Et ex chorda arcus 30. gra. chordā arcus 15. gra. deinde chordā arcus 7. gra. & dimidij. Et ex chorda arcus 36. gra. chordam arcus 18. gra. deinde 9. deinde 4. gra. cū dimidio. Et sic de alijs consimilibus eodem modo est procedendum.

Deinde ex quinta habebitur qualiter per arcum 1. gra. & dimidij, & eius chordā multorū arcuū chordæ possunt inueniri, ut si chorda arcus 1. gra. & dimidij cōponatur cum quacunque chordarū notarū, aut si arcus illarum chordarū duplantur uel triplantur, & sic deinceps: aut si ad arcū habētem chordam notā addatur arcus sibi æqualis, aut arcus maior aut minor eo, chordam etiā habens notā, quomodo chorda totius arcus ex eisdē compositi debeat inueniri. Illud aūt generaliter debet inueniri hoc modo. Primo quære chordam residui arcus semicirculi ad arcum chordæ primo propositæ per Corollarium primæ huius. Deinde quære etiā chordam residui arcus semicirculi super arcū secūdæ chordæ primæ superadditæ per eundem modū. Post chordam residui primi arcus, duc in chordam residui secundi arcus, & productum serua. Post hæc chordam primo propositā duc in chordam secundā primæ superadditam, & quod exit, subtrahe à producto iam seruato, & quod remanet diuide per diametrū, & exit quantitas chordæ superflui arcus semicirculi ultra arcum totalem cōpositum ex illis duobus arcubus. Quadratū igitur ipsius subtrahe à quadrato diametri, & residui radix erit chorda totius arcus compositi. Ita ex chorda arcus 3. gra. & chorda arcus 1. gra. cum dimidio, reperies chordam 4. gra. & dimidij, & etiam chordā arcus 175. gra. & dimidij. Et similiter in alijs si alicui arcui habenti notā chordam addatur arcus maior aut minor similiter chordā habens notam, inuenies chordam totius arcus ex his cōpositi. Si uero alicuius arcus notam chordam habentem, dupli arcus chordam reperire uolueris, primo est quadranda chorda arcus propositi, & ipsum quadratum dematur de quadrato diametri, & à residuo dematur quadratū chordæ arcus propositi, & residuum per diametrum diuidatur, & exibit chorda residui de semicirculo ultra arcum compositum ex duplo arcus propositi, cuius quadratū de quadrato diametri auferatur, & residui radix erit chorda arcus dupli ad arcum propositum. Ita ex chorda arcus 4. gra. & dimidij poteris inuenire chordam arcus 9. gra. Consimiliter cuiuscunque al-

terius dupli arcus ad aliquem arcum chordã habentem notã poteris chordam inuenire.

Postremò ex sexta propositione, potest haberi qualiter per chordam arcus 1. gra. & dimidij, & per chordam arcus medietatis & quartæ unius gradus inueniri debeat chorda 1. gra. Si enim haberetur chorda arcus 30. minut. qui est tertia pars arcus 1. gra. & dimidij, omnes chordæ arcuum aliorũ ueraciter essent notæ. Nam in Tabula Ptolemæi ponuntur arcus secundũ augmentum dimidij gra. Vnde si reperiretur chorda arcus medietatis grad. inuenirentur cum ea per præcedentẽ capitulũ, quantitates chordarum reliq̃rum arcuum, quæ sunt inter chordas notas, quas nominamus secundum ueritatem numerationis linearum, & per hoc compleremus omnes chordas semicirculi secundum superfluum dimidij grad. Hoc autem secundum ueritatem non reperitur. Quoniam & si chorda arcus 1. gra. & medij sit nota chorda, tamẽ eius tertia, scilicet arcus 30. min. sub numeri computo, & secundũ ueritatem numerationis non est reperta. Eiusdem tamẽ rei noticia præsenti intentiõi est necessaria. Summo igitur studio & industria, quamuis nõ contineat uere quantitatem omnium chordarum, possibile tamen est, ut per ipsum inueniatur quantitas chordarum paruorum arcuum, ita ut secundum ueritatem nihil quod sensibilis sit quantitatis deficiat, inuentus est modus, quo chorda arcus medietatis gra. per chordam arcus 1. gra. & dimidij, & per chordam arcus medietatis & 4. gra. reperta est. Et est talis: Sit circulus a b d g, in quo sint tres chordæ, una a b subtendatur arcui medietatis & 4. gra. Alia a d subtendatur 1. gradui. Tertia a g subtendatur arcui gra. et dimidij. Quia ergo per sextam huius proportio chordæ a d ad chordam a b, minor est proportiõe arcus a d ad arcum a b. Arcus autem a d ad arcum a b est sesquitertius. Ostensum est autem ex dictis, quòd chorda a b est 0. gra. 47. min & 7. secund. si eius tertia, quæ est 15 min. 42. secund. & 20. tert. sibi superadditur, proueniet 1. gra. 2. min. 49. secund. & 20. tert. & hoc est sesquitertium ad chordam a b. Sed chorda a d minor est ad a b quàm sesquitertia, ideo chorda a d minor erit quòd 1. gra. 2. min. 49. secund & 20. tert. Rursum quia proportio chordæ a g ad chordã a d minor est quàm proportio arcus a g ad arcũ a d per sextam. Arcus autem a g sesquialterus est ad arcum a d. Ex dictis autem patet quòd chorda a g est 1 gra. 34. min. 14. secund. & si ab ea subtrahitur eius tertia pars, quæ est 31. min. 24. secund. & 40. tert. residuum erit 1. gra. 2. minut. 49. sec. & 20. tert. & ad illud chorda a g est sesquialtera. Igitur chorda a d respectu chordæ a g, est maior quàm 1. gra. 2. min. 49. secund. & 20. tert. Est ergo chorda arcus 1. gra. respectu chordæ unius medietatis & 4. gra. minor quàm 1. gra. 2. min. 49. secund. & 20. tert. Et respectu chordæ unius gradus & medietatis maior est q̃ 1. gra. 2. min. 49. sec. & 20. tert. manifestũ est, quòd conueniens est ut pro chorda unius gradus circuli accipiamus 1. gra. 2. min. & 49. secund. de gradibus de quibus semidiameter est 60. Sic enim minus quàm in duabus tertijs unius tertij erit error, quare multo minus quàm in uno secundo, sed in inquisitione chordarum, quod minus quàm secundum fuerit postponitur. Et ex hoc patet, quæ sit quantitas chordæ arcus dimidij gradus, ipsa enim erit 0. gra. 31. min. 25. sec. ferè. Et per illius quantitatẽ cõplebitur residuũ reliquarum chordarum, quæ binatim cadunt inter duas chordas notas. Chordam nanq; arcus duorum graduum sciemus per compositionem arcus unius gra. & dimidij, cum arcu unius medietatis gra. Sed chordã arcus 2. gra. & dimidij, sciemus per superfluum arcus 3. gra. supra arcum medietatis gradus. Et similiter sciemus quantitates reliquarum chordarum, facilis ergo est secundum præmissorum tenorem chordarum ad suos arcus cognitio.

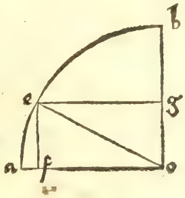


Compositio

COMPOSITIO TABVLARVM SInuum rectorum, per Ioannem de Regiomonte.

FECERE maiores nostri sinus & chordarum tabulas, quorum usus maxime necessarius est, certas aliarum tabularum numerationes reddere uolenti. Verum omnes illi diametrum circuli paucarum admodum partium constituerunt, ueluti Ptolemæus 120, Arzahel 300. unamquanque partium in 60 minuta, minutumque in 60 secunda distinguentes. In arcu etiam, tantum per quartam gradus lineam numerū in sinubus auxerunt, propter quod fit, ut cum ex arcu sinum, aut econtra ex sinu arcum elicere uelimus, sæpe necesse sit sumere partes proportionales, itemque in usu sinuum, partes in minuta, minutaque in partes reducere. Quod profecto nedum parum in arte numerandi instituto, sed etiam peritissimis tædium parit. Vt igitur hoc impedimentum tolleretur, facilisque fieret sinuum inuentio, conatus sum nouas tabulas fabricare, quarum extensio in arcu per singula minuta procederet ipsamque circuli semidiametrum, quæ sinus totus est, ne amplius aliqua subdiuisione opus esset, 6000000 partiū fore supposui. Compositio uero ipsa talē habuit progressum.

PROPOSITIO PRIMA.

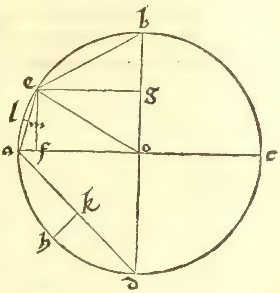


Cognito sinu alicuius arcus quarta circuli minoris, notus fiet & sinus complementi talis arcus.

Nam quadratum semidiametri æquale est duobus quadratis sinuum duorum arcus & sui complementi, ut in quarta a o b, arcus a e sinus sit e f. Arcus autē e b, sinus sit e g, quadratum e o, æquale est duobus quadratis linearum e f & f o, sed f o æqualis est e g &c.

PROPOSITIO II.

Sinus arcuum per Kardagas authorum ostendere.



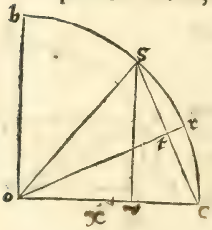
Kardaga portio arcus 15 graduum appellatur. Pro huius ostensione sit circulus a b c d, super centro o, duabus diametris eius orthogonaliter sese secantibus a c, b d, arcus a e sit 30. graduum, eritque e b, 60 graduum, propterea erit e b linea recta latus hexagoni circulo inscriptibilis, ideo æquale semidiametro e o, aut o b. Quare e g perpendicularis super o b, diuidet o b in partes æquales, sed e f sinus arcus a e, æqualis est & æquedistans o g. Ideo nota o b sinu toto, nota erit e f sinus arcus 30. graduū, quia medietas sinus totius: hinc ex priore cognita fiet linea e g, quæ sinus est portionis 60. graduum. Præterea facta chorda a d, & arcu a h, 45. graduū, h k diuidens a d per æqualia, distinguet a k sinum 45. graduum, qui patebit ex hoc quod quadratum semidiametri duplum sit quadrato lineæ a k. Denique ducta chorda a e, diuisaque per medium in m, fiet a m sinus arcus 15. graduū, qui innotescet ex quadratis a f & f e, ea enim coniuncta faciunt quadratum a e, quod quadruplum est quadrato lineæ a m. Tandem ex sinu arcus 15. graduum, & propositiōe prima cognitus fiet sinus arcus 75. graduum. Sic omnium Arcuum per Kardagas authorum sinus patefacti sunt. Præsupposui autem in inuentione horum sinuum propter maiorem præcisionem, semidiametrum circuli partes habere 600000000. & secundum hoc repperi sinus arcuum illorum, ut hic habes.

Arcus.	Sinus.
90	600000000
30	300000000
60	519615242
45	424264069
15	155291427
75	579555496

PROPOSITIO III.

Cuiuslibet arcus quarta minoris, ſinus rectus, eſt medio loco proportionalis inter medietatem ſemidiametri & ſinum uerſum arcus duplicis.

Vt ſit in quarta circuli arcus c r datus, ad quẽ duplus ſit c s, ductis lineis c s, & o r ſecante c s in t. Item s u orthogonali ſuper o c, & medietas o c ſit o x. Dico iã c t eſſe medio loco proportionalẽ inter x c & c u. Sunt enim duo trianguli o c t & s c u ſimiles, quòd quilibet rectangulus ſit & unum communem habeant, ideo proportio o c ad s c, eſt ſicut proportio t c ad c u, ſed o c ad s c, eſt ſicut ſuarum medietatum, ſcilicet x c ad c t, quare x c ad c t, ſicut c t ad c u, ſic patet propoſitionis intentio. Ex hac propoſitione concluditur, cuiuſcunq; arcus ſinus notus fuerit, cognitus etiam erit ſinus medietatis talis arcus, ut in exemplo, ſi uelis inuenire ſinũ medietatis primæ Kardagæ, habes ex priore ſinum complementi huius Kardagæ, ſcilicet arcus 75 graduum, cuius differentia ad ſemidiametrum eſt ſinus uerſus 15 graduum, ideo notus. Nam id generale eſt in quarta circuli cuiuslibet arcus ſinus differẽtia ad ſemidiametrũ eſt ſinus uerſus complementi talis arcus de quarta circuli. Sic multiplicatio huius in medietatem ſemidiametri eſt nota, quæ æquatur quadrato ſinus recti arcus 7. graduum et 30. minutorum. hinc huius cõplemẽti ſinus notus fiet. Item ex hoc ſinus uerſus arcus 7 grad. & dimidij, inde ſinus rectus portionis 3. graduum & 45. minut. ex hoc etiã ſinus complementi eius. & ſic de alijs arcubus, quorum ſinus hic poſui in tabella, quos ſi cum ſuperioribus iunges, fient ſinus omnium arcuum per 3. grad. & 45. minuta authorum. Ex hac etiam propoſitione conſtat cuiuſcunq; arcus ſinus notus eſt, fiet & cognitus ſinus arcus duplicis, quamuis hac uia non gradiemur.

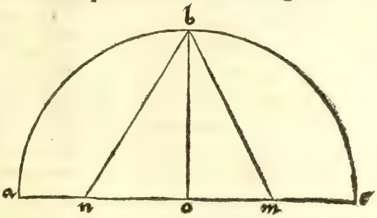


Arcus. G.	m̃.	Sinus.
7	30	78315715
82	30	594866917
3	45	39241877
86	15	598715354
22	30	229610059
67	30	554327720
11	15	117054193
78	45	588471168
37	30	365256858
52	30	476012004
18	45	192863679
71	15	568158078
41	15	395607489
48	45	451103884
33	45	333342140
56	15	498881767
26	15	265373214
63	45	538123645

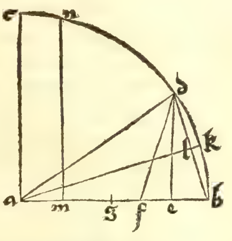
PROPOSITIO IIII.

Latera decagoni atq; pentagoni circulo inſcriptibilium nota facere.

Sit ſemicirculus a b c,ſuper cẽtro o,ſemidiametro o b orthogonaliter ſuper diametro a c ſtante,punctum m diuidat o c per æqualia,ductæ b m ſit æqualis m o n,ſi duxeris lineam b n,dico n o latus decagoni,& b n latus pentagoni eſſe. Eſt enim c o diuiſe in m per æqualia adiuncta o n, ideo quod fit ex c n in n o cum quadrato o m,æquale erit quadrato m n ſeu m b, ſed quadratum m b,ſeu m n æquale eſt duobus quadratis b o & o m,ergo q̃d fit ex c n in n o, eſt æquale q̃drato o b ſeu o c, Ideo o c eſt medio loco proportionalis inter c n et n o,ergo linea c n, diuiſa eſt ſecundum proportionem habentem mediũ & duo extrema,& quia eius maior portio c o eſt ſemidiameter circuli,ſequitur ex hoc ut n o ſit latus decagoni talis circuli. Sed q̃a latus pentagoni potentius eſt latere hexagoni in potẽtia lateris decagoni, oportet ut b n ſit latus pentagoni,quod eſt propoſitũ. Ex hac inuenies ſinum arcus 36. graduum, ſic, quadratũ o b & quadratũ o m faciunt, quadratum m n, ergo m n cognita,ablata o m, manebit o n data, cuius quadratum iunctum quadrato ſemidiametri, producet quadratum chordæ arcus 72 graduum. Cuius quadrata quarti pars eſt quadratum ſinus arcus 36.graduum. Ex hoc ſinu ſecundũ doctrinas præcedentes inuenies ſinus arcuũ hic poſitorum,qui cum ſuperioribus iuncti ſinus arcuum per 2.gradus & 15.minuta authorum efficient.



In his uides quòd ſinus arcus 54 graduum, ex ſinu arcus 30.graduum, & ſinu arcus 18 graduum conſtat, Cuius rei cauſam ſic accipe. In quarta a b c ſuper centro a,ſit arcus c d 54.graduum, eritq; d b 36.demiſſa d e perpendiculari ſuper a b, fiet d e ſinus 36.graduum, & a e ſinus 54.graduum,ſitq; b k arcus 18.graduum,ductam chordã d b,ſecet a k linea in l,& medietas ſemidiametri ſit a g, dico g e æqualem eſſe b l ſinui arcus 18 graduum. Fiat enim e f æqualis e b, ducantur a d & d f lineæ, à puncto m mediæ lineæ a f orthogonalis m n exeat ad periferiam. Cum angulus d a b ſit quinta pars duorum rectorum ex poſito, & anguli ſupra baſim b d ſint æquales, oportet angulum a b d eſſe duas quintas duorum rectorum, cui eſt æqualis angulus d f b, ergo angulus d f a eſt tres quintæ duorum rectorum, ex hoc opus eſt, ut angulus a d f ſit una quinta duorum rectorum, ideo æqualis angulo d af,ergo a f æqualis d f, ſed d f æqualis eſt d b,ideo a f æqualis erit d b,quare m f æqualis b l, & quia m e æqualis eſt g b,quòd utraq; ſit medietas ſemidiametri,ablato cõmuni fiet m g æqualis e b, aut e f,additoq; cõmuni g f,habebis m f æqualem g e,ideoq; g e æqualis erit b l,quod fuit oſtendendum. Ex hoc etiam inferre potes ſinum uerſum arcus 72. graduum, ex ſinu uerſo arcus 36.graduum,& ſinu recto arcus 30.graduum conſtare. Nam cum a m ſit ſinus arcus 18.graduum,erit c n t arcus 18.graduum, & n b arcus 72. graduum, cuius ſinus uerſus eſt m b,ſed m b conſtat ex m e & e b. m e autem ſinus rectus eſt arcus 30.graduum, quia medietas ſemidiametri,e b uero ſinus uerſus eſt arcus 36.graduum, ſcilicet arcus b d.



Arcus. G.	m̃.	Sinus.
36	0	352671151
54	0	485410197
18	0	185410197
72	0	570633909
9	0	93860679
81	0	592613004
4	30	47075458
85	30	598150400
2	15	23555889
87	45	599537422
27	0	272394297
63	0	534603915
13	30	140067218
76	30	583421952
6	45	70522438
83	15	595841074
40	30	389668829
49	30	456243579
20	15	207670234
69	45	562914802
42	45	407280447
47	15	440593506
31	30	313499140
58	30	511584098
15	45	162864270
74	15	577473142
38	15	371456371
51	45	471190159
24	45	251195842
65	15	544885904
29	15	293172744
60	45	523497605

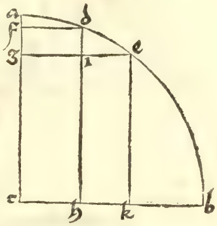
Arcus. G.	m̃.	Sinus.
12	0	124747015
78	0	586888561
6	0	62717078
84	0	596713137
3	0	31401574
87	0	599177721
1	30	15706169
88	30	599794394
45	0	7853773
89	15	599948596
39	0	377592235
51	0	466287577
19	30	200284116
70	30	565584895
9	45	101609702
80	15	591333635
42	0	401478364
48	0	445886895
21	0	215020770
69	0	560148256
10	30	109341315
79	30	589952945
5	15	54900971
84	45	597482957
43	30	413012745
46	30	435224623
21	45	222334462
68	15	557285732
44	15	418674276
45	45	429781166
25	30	258306658
64	30	541551171
12	45	132418461
77	15	585205392

Arcus. G.	m̃.	Sinus.
35	15	346287114
54	45	489984933
24	0	244041986
66	0	548127275
34	30	339843742
55	30	494475713
17	15	17792 945
72	45	573011967
39	45	383663401
50	15	461305099
23	15	236846314
66	45	551274726
32	15	320168709
57	45	507436663
33	0	326783421
57	0	703202341
16	30	179409207
73	30	575291841
8	15	86095573
81	45	593790832
27	45	279368712
62	15	530992582
28	30	286295256
61	30	527290268
14	15	147691976
75	45	581538546
36	45	358994760
53	15	480752288
30	45	306775852
59	15	515643849

PROPOSITIO V.

Latus quindecagoni circulo inſcriptibilis notum reddere.

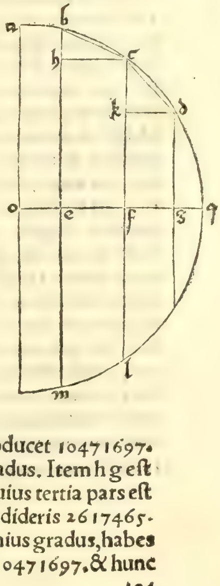
Sit in quarta circuli a b ſuper centro c, arcus a d 30. graduum. Item a e 54 graduum, ductis d f & e g perpendicularibus ſuper a c. Item d h & e k perpendicularibus ſuper b c, erunt e g ſinus portionis 54. graduum, & e k ſeu h i ſinus portionis 36. graduum. Item d f ſeu i g ſinus 30. graduum, & d h ſinus arcus 60. graduum, quæ ex ſuperioribus nota ſunt. Igitur e i ſcilicet exceſſus ſinus arcus 54. graduum ſupra ſinum arcus 30. graduū notus. Similiter i d nota fiet ſcilicet exceſſus ſinus arcus 60. graduum ſupra ſinum arcus 36. graduum. Sed ducta chorda e d, eſt chorda arcus 24. graduum, ſcilicet latus quindecagoni, cuius quadratum æquale eſt duobus quadratis linearum e i & i d, ſic linea e d nota fiet, quod eſt propoſitum. Secundum autem ſimile ingenium quorumcunque duorum arcuum ſinus noti fuerint, poteris inueſtigare ſinum dimidij differentiæ eorum. Ex hac cognoſces ſinum arcus 12. graduum, ex quo per doctrinas ſuperiores inuenies multorum arcuum ſinus, adeo ut ſi proceſſeris quoad potueris in arcu tamen minutum gradus non ſecando, reperies arcuum hic poſitorum ſinus, qui ſuperioribus iuncti ſinus arcum per 45. minuta augmentum ſuſcipientium conſtituent.



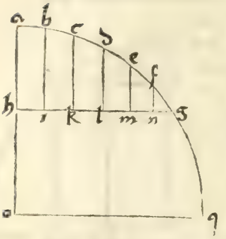
PROPOSITIO VI.

In quarta circuli ſumptis arcubus æqualibus inæqualiter à capite quartæ diſtantibus, ab eorū terminis perpendiculares ad baſim demiſſæ inæquales baſis partes intercipient, maiorque pars erit, cuius arcus capiti uicinior fuerit.

Vt in quarta a q, cuius caput a, baſis o q, datis arcubus b c & c d æqualibus, quorum b c uicinior ſit ad a quàm c d. Demiſſæ perpendiculares ſint b e, c f, d g, dico e f maiorem eſſe f g. Tractis enim chordis b c & c d, quæ æquales erunt, fiant trianguli orthogonij c h b & d k c, quibus intelligas circulos eſſe circūſcriptos, quos neceſſe eſt æquales eſſe, quod eorum diametri b c & c d ſint æquales. Sed angulus c b h maior eſt angulo d c k, quòd arcus c m maior ſit arcu d l, ideo oportet neceſſario in circulis circumſcribentibus trigonos arcum anguli c b h maiorem eſſe arcu anguli d c k, hinc & chordam primi, ſcilicet c h, maiorem eſſe chorda ſecundi ſcilicet d k, ſed e f eſt æqualis c h, & f g eſt æqualis k d, igitur e f eſt maior f g, quod fuit oſtendendum. Ex hac propoſitione elicies ſinū arcus unius gradus inter duo conſtare; Sit enim in quarta circuli arcus a d 45. minutorum unius gradus, & arcus g ſit unus gradus cum dimidio, cuius ſinus ſit h g. Item a e ſit unus gradus, productis d l & e m orthogonalibus ſuper h g, erit h l ſinus arcus 45. graduum. h m uero ſinus arcus unius gradus quem quærimus. Subdiuido arcum a d in tres æquales a b, b c, c d. & e g in duos æquales, ſcilicet e f & f g. eritque quilibet horum quarta unius gradus, ſicut d e, cadant quoque b i, c k & f n perpendiculariter ſuper h g. Quia uero h l ex prioribus habetur 7853773, huius tertia pars eſt 2617924. quæ neceſſario maior eſt utraque linea tam i k quàm k l, prout ex propoſitione concluditur, igitur multo magis maior quàm l m, quare iuncta cum h l producet 10471697. maiorem quàm ſit h m, ideo 10471697. maior eſt quàm ſinus unius gradus. Item h g eſt ex prioribus 15706169. ſed h l eſt 7853773. ideo l g fiet 7852396. huius tertia pars eſt 2617465. quam utique conſtat minorem eſſe l m. Cum uero ſuper h l addideris 2617465. prodibunt 10471238. quæ neceſſario minus ſunt h m, ſcilicet ſinu unius gradus, habes itaque ſinum unius gradus concluſum inter hos duos numeros, ſcilicet 10471697. & hunc



1047123 8. Ex maiore horum si processeris secundum doctrinam primæ & tertiæ propositionum, inuenies sinum 89. graduum maiorem esse quàm 599908613. Inde residuũ de semidiametro, scilicet 91387. maius est sinu uerso unius gradus, q̃d ductũ in 300000000 scilicet dimidium semidiametri, ut nunc supponimus, faciet quadratum, cuius radix 5236044. quæ necessario plus est quàm sinus dimidij gradus, ex quo etiam inuenies



599977152. minus esse sinu 89. graduum & dimidij. Ex minore autem, si processeris secundum easdem doctrinas, inuenies sinum 89 graduum, minorem esse quàm 599908621. Inde 91379 minus esse sinu uerso unius gradus, hinc & 5235818. minus sinu dimidij gradus, ex quo etiam habes 599977155 plus esse sinu 89. graduum & dimidij. Ex his modo illud accipe, licet in inuentione sinuum per augmentum 45. minutorum in arcu procedendo supposuerimus sinum totum esse 600000000. propter præcisionem inuentionis, in tabulando tamen supponemus eum esse nisi 6000000. quod id sufficiat, sic sinum arcus dimidij gradus inuenimus plus esse quàm 52358. & minus quàm 52360. conueniens est igitur ut ipsum inter hæc duo statuamus scilicet 52359. dum totus fuerit 6000000. nec unquàm aliquid erroris in operæ senties. Hinc sinum arcus 15. minut. reperies 26180. Item unius gradus 104715. & sinum arcus 89. graduum 5999086. item 89. grad. & 45. minut. 5999943. Ex his igitur secundum doctrinas superiores, si libet, poteris omnium arcuum per quartam gradus augmentum suscipientium sinus complere. Nam iuxta ingenium dictũ in quinta ex sinu arcus 30 minutorum sinuq́ꝫ sui complementi, item sinu arcus 52. graduum & 30. minutorũ, sinuq́ꝫ sui complementi reperies chordam arcus 52. graduum, inde sinus arcus 26. graduum notus fiet, ex hoc sinus sui cõplementi, scilicet 64. graduum, & sic de alijs usquequo habueris omniũ arcuum per 15. minuta augmentatarum sinus. Verũ id tibi non opus esse reor, cum alia uia idem reperibile sit. Habes antea omnium arcuũ per tres quartas gradus unius crescentium sinus, eos ordinabis ut debet, differentiasq́ꝫ omnium sibi proximorum nota, quarum quælibet 45. minutis medijs correspondebit, quamlibet earum quemadmodum ab initio ad finem continue decrescunt, ita secabis in partes tres, quòd ipsæ sectæ quoque uniformitatem in decrescendo seruent, quod facile fiet dum mediam earum semper adæquatam differentiæ tertiam constitues. Ex his perficies sinus arcuum authorum per quindecim minuta. Hinc iterum omnium horum sinuum differentias notabis, quælibet enim earum 15. minutis medijs correspondebit, quarum etiam quamlibet quemadmodum à principio uersus finem decrescunt, ita secabis in partes tres, ut ipse quoque in decrescendo seruent regulam, & ex his complebis omnium arcuum per quinq; minuta crescentium sinus. Simili uia supplebis tabulam sinus per singula minuta in arcu crescentem. Quod si diligens differentiarum notator atq; iuxta proportionem decremento earum sector fueris, tanta præcisione tibi sinus constitues quanta fierent, si iuxta doctrinas propositionum superiorum ad unguem singula prosequereris. Atq; ut huic rei fidem maiorem faceremus, in plerisq; locis utrunq; modum tentauimus, neq; quicquàm in illis discordiæ ceciderat. Sic igitur in nostra tabula sinus id commodi est, ut singulis minutis gradus suos habeas sinus correspondentes, idq; certitudinis ut non sicut in alijs, quæ per quartam partem gradus tantum augmentatæ sunt, quod uni quartæ gradus intermediæ respondet, æqualiter per quartam eandem extensum sit, sed secundum differentiarum decrementum proportionabiliter per minuta intermedia est distributum. Habes quoq; sinum totum hic positum 6000000. partium, per quam extensionem, ad secunda minutorum in arcu cum necesse sit, deuenire cum certitudine poteris. Si uero in minutis arcus standum tibi fuerit, ages per sinus eosdem, primas uersus dextram duas figuras omittendo, & tunc sinus totus 60000. partium supponetur.

Propo

PROPOSITIO VII.

Ex hac tabula ſinum arcus cuiuſcunq; reperire.

Gradus arcus quæres in ſuperiore parte tabulæ, numerum uero minutorum in ſiniſtra, quod ſi non fuerint in arcu ſecunda cum minutis, habes in angulo communi ſinum quæſitum. Si uero in arcu etiam ſecunda fuerint, uide quantum in ea parte tabulæ uni ſecundo reſpondeat, quod in numerum ſecundorum ductum, adde ſinui in angulo communi poſito, & exibit quod quæris. Sic inueniſti ſinum, pro ut totus eſt 6000000. quod ſi uoles eundē habere, prout totus eſt 60000. abijcies ex eo primas duas figuras uerſus dextram, & ſic de alijs. facile eſt econtra ex ſinu arcum cognoſcere &c.

Sequitur Tabula Sinuum ad 6000000 partes per Ioannem de Regiomonte computata.

C

G. m.	0 Sinus.	portio unius 1/10	1 Sinus.	portio unius 1/10	2 Sinus.	portio unius 1/10	3 Sinus.	portio unius 1/10	4 Sinus.	portio unius 1/10
0	0	29 1	104715	29 1	209397	29 1	314016	29 0	418540	29 0
1	1745		106460		211141		315759		420281	
2	3491		108205		212885		317502		422022	
3	5336		109950		214530		319244		423563	
4	6982		111695		216374		320987		425504	
5	8727		113440		218118		322730		427245	
6	10472		115185		219873		324473		428986	
7	12218		116930		221606		326216		430727	
8	13963		118675		223351		327958		432467	
9	15709		120420		225095		329701		434208	
10	17454		122165		226839		331444		435949	
11	19199		123910		228583		333187		437690	
12	20944		125655		230327		334929		439430	
13	22690		127400		232071		336672		441171	
14	24435		129145		233815		338414		442911	
15	26180		130890		235559		340157		444652	
16	27925		132635		237303		341899		446392	
17	29671		134380		239047		343642		448133	
18	31416		136124		240791		345384		449873	
19	33162		137869		242535		347187		451614	
20	34907		139614		244279		348869		453354	
21	36652		141359		246023		350611		455094	
22	38397		143104		247767		352354		456834	
23	40143		144848		249510		354096		458575	
24	41888		146593		251254		355838		460315	
25	43633		148338		252998		357580		462055	
26	45378		150083		254742		359322		463795	
27	47123		151828		256485		361064		465535	
28	48869		153572		258229		362807		467275	
29	50614		155315		259972		364549		469015	
30	52359		157062		261716		365291		470755	
31	54104		158807		263460		368033		472495	
32	55850		160551		265203		369775		474235	
33	57595		162296		266947		371517		475974	
34	59341		164040		258690		373259		477714	
35	61086		165785		270434		375001		479454	
36	62831		167530		272178		376743		481194	
37	64576		169274		273921		378485		482933	
38	66322		171019		275668		380226		484673	
39	68067		172763		277408		381968		486412	
40	69812		174508		279152		383710		488152	
41	71557		176253		280395		385452		489871	
42	73302		177997		282639		387194		491631	
43	75048		179742		284382		388935		493370	
44	76793		181486		286126		390677		495110	
45	78538		183231		287869		392419		496849	
46	80283		184975		289612		394161		498588	
47	82028		186720		291355		395602		500327	
48	83774		188464		293009		397644		502067	
49	85519		190209		294842		399385		503806	
50	87264		191953		295585		401127		505545	
51	89009		193697		298328		402868		507284	
52	90754		195442		300071		404610		509023	
53	92500		197186		301815		406351		510762	
54	94245		198931		303558		408093		512501	
55	95990		200675		305301		409834		514240	
56	97735		202419		307044		411575		515979	
57	99480		204164		308787		413316		517718	
58	101225		205908		310530		415058		519454	
59	102970		207653		312273	29 1	416799		521195	
60	104715		209397		314016	29 0	418540		522934	

G. / m.	5 Sinus.	port. unius ž 10.	6 Sinus.	port. unius ž 10	7 Sinus.	port. unius ž 10	8 Sinus.	port. unius ž 10.	9 Sinus.	portio unius ž 10.
0	522934	29 0	627171	28 9	731215	28 9	835040	28 8	938607	28 7
1	524674		628907		732947		836768		940331	
2	526411		630642		734679		838496		942954	
3	528150		632378		736412		840225		943778	
4	529888		634113		738144		841953		945501	
5	531627		635849		739876		843681		947225	
6	533365		637584		741608		845409		948948	
7	535104		639320		743340		847137		950671	
8	536842		641055		745071		848864		952395	
9	538581		642791		746803		850592		954118	
10	540319		644526		748535		852328		955841	
11	542057		646261		750267		854047		957564	
12	543795		647996		751998		855775		959287	
13	545534		649731		753730		857502		961009	
14	547272		651466		755461		859230		962732	
15	549010		653201		757193		860957		964455	
16	550748		654936		758923		862684		966177	
17	552486		656671		760655		864411		967900	
18	554224		658405		762387		866139		969622	
19	555962		660140		764118		867866		971345	
20	557700		661875		765849		869593		973067	
21	559438		663609		767580		871320		974789	
22	561175		665344		769311		873047		976511	
23	562973		667078		771042		874773		978223	
24	564650		668813		772773		876500		979955	
25	566388		670547		774504	28 8	878227		981677	
26	568125		672281		776235		879953		983399	
27	569863		674015		777965		881679		985120	
28	571600		675750		779696		883406		986842	
29	573338		677484		781426		885132		998563	
30	575075		679218		783157		886858		990285	
31	576812		680952		784887		888584		992006	
32	578549		682686		786617		890310		993727	
33	580287		684420		788348		892036		995449	
34	582024		686154		790078		893762		997170	
35	583761		687888		791808		895488		998891	
36	585498		689622		793538		897214		1000612	
37	587235		691355		795268		898939		1002333	
38	588972		693009		796998		900665		1004053	
39	590709		694822		798728		902390		1005774	
40	592446	28 9	696556		800458		904116		1007495	
41	594183		698289		802188		905841		1009215	
42	595919		700023		803917		907566		1000936	
43	597656		701756		805647		909291		1012655	
44	599392		703489		807376		911016		1014377	
45	601129		705223		809106		912741	28 7	1016097	
46	602865		706956		810835		914456		1017817	
47	604602		708689		812564		916191		1019537	
48	606338		710423		814294		917915		1021257	
49	608075		712175		816023		919640		1022977	
50	609811		713887		817752		921365		1024697	
51	611547		715620		819481		923089		1026416	
52	613283		717353		821219		924814		1028136	
53	615920		719085		822939		926538		1029855	
54	616756		720820		824668		928263		1031575	
55	618492		722553		826397		929987		1033294	
56	620228		724885		828126		931711		1035013	
57	621964		726018		829854		933435		1036732	
58	623699		727750		831583		935159		1038451	
59	625435		729483		833311		936883		1040170	
60	627171		731215		835040		938607		1041899	

G. m.	10 Sinus	portio uni9 2 10	11 Sinus	portio uni9 2 10	12 Sinus	portio uni9 2 10	13 Sinus	portio uni9 2 10	14 Sinus	Portio ue nis secūdi 10
0	1041889	28 6	1144854	28 6	1247470	28 5	1349707	28 3	1451531	28 2
1	1043608		1146567		1249177		1351407		1443224	
2	1045326		1148280		1250884		1353108		1454917	
3	1047045		1149993		1252590		1354808		1456611	
4	1048763		1151706		1254295		1355509		1458304	
5	1050482		1153419	28 5	1256004	28 4	1358209		1459997	
6	1052200		1155132		1257710		1359909		1461690	
7	1053918		1156844		1259417		1361608		1443382	
8	1055637		1158557		1261123		1363308		1465075	
9	1057355		1160269		1262830		1365007		1466767	
10	1059073		1161982		1264536		1366707		1468460	
11	1060791		1163694		1266242		1368406		1470152	
12	1062508		1165406		1267948		1370105		1471844	
13	1064226		1167118		1269653		1371805		1473536	
14	1065943		1168830		1271359		1373504		1475228	
15	1067661		1170542		1273055		1375203		1476920	
16	1069378		1172254		1274770		1376902		1478611	
17	1071095		1173965		1276476		1378600		1480303	
18	1072813		1175677		1278181		1380299		1481994	
19	1074530		1177388		1279887		1381997		1483686	
20	1076247		1179100		1281592		1383696		1485377	
21	1077964		1180811		1283297		1385394		1487068	
22	1079681		1182522		1285002		1387092		1488759	
23	1081397		1184233		1286706		1388790		1490449	
24	1083114		1185944		1288411		1390488		1492140	
25	1084831		1187655		1290116		1392186		1493831	
26	1086547		1189366		1291820		1393883		1495521	
27	1088264		1191076		1293524		1395580		2497211	
28	1089980		1192787		1295229		1397278		2498901	
29	1091697		1194497		1296933		1398975		2500591	
30	1093413		1196208		1208637		1400672		1502281	
31	1095129		1197918		1300341		1402369		1503970	
32	1096845		1199618		1302045		1404066		1505660	
33	1098560		1201338		1303748		1405762		1507349	
34	1100276		1203048		1305452		1407459		1509039	
35	1101992		1204758		1307156		1409156		1510728	
35	1103707		1206468		1308859		1410852		1512417	
37	1105423		1208177		1310562		1412548		1514106	
38	1107138		1209887		1312266		1414245		1515794	
39	1108854		1211596		1313969		1415941		1517483	
40	1110569		1213306		1315672		1417657		1519172	28 1
41	1112284		1215015		1317375		1419353		1520860	
42	1113999		1216724		1319077		1421028		1522548	
43	1115714		1218433		1320780		1422724		1524236	
44	1117429		1220142		1322482		1424419		1525924	
45	1119144		1221851		1324185		1426115		1527612	
46	1120858		1223559		1325887		1427810		1529298	
47	1122573		1225268		1327589		1429505		1530987	
48	1124287		1226976		1329291		1431200		1532674	
49	1126002		1228685		1320993		1432895		1534362	
50	1127716		1230393		1332695		1434590	28 2	1536049	
51	1129430		1232101		1334396		1436284		1537736	
52	1131144		1233809		1336098		1437879		1539423	
53	1132858		1235517		1337799		1439673		1541109	
54	1134572		1237225		1339501		1431368		1542796	
55	1136286		1238933		1341202		1443062		1544483	
56	1138000		1240640		1342903		1444756		1546169	
57	1139713		1242348		1344604		1449449		1547855	
58	1141427		1243055		1346305		1448143		1549541	
59	1143140		1245763		1348006		1449837		1551228	
60	1144854		1247470		1349707		1451531		1552914	

G. m.	15 Sinus	portio uni9 $\bar{z}$ 10	16 Sinus	portio uni9 $\bar{z}$ 10	17 Sinus	portio uni9 $\bar{z}$ 10	18 Sinus	portio uni9 $\bar{z}$ 10	19 Sinus	portio unius $\bar{z}$ 10.
0	1552914	28 1	1653825	28 0	1754229	27 8	1854102	27 7	1953409	27 5
1	1554600		1655502		1755898		1855762		1955059	
2	1556285		1657180		1757567		1857421		1956709	
3	1557971		1658857		1759235		1859081		1958359	
4	1559656		1660535		1760904		1860740		1960009	
5	1561342		1662212	27 9	1763573		1862400		1961659	
6	1563027		1663889		1764241		1864059		1963308	
7	1564712		1665595		1765909		1865718		1964957	
8	1566396		166-242		1767577		1867376		1966606	
9	1568081		1668918		1769245		1869035		1968255	
10	1569766		1670565		1770913		1870694	27 6	1969904	
11	1571450		1672271		1772580		1872352		1971552	
12	1573134		1673947		1774247		1874010		1973200	
13	1574819		1675623		1775915		1875667		1974848	
14	1576503		1677299		1777582		1877325		1976496	
15	1578187		1678975		1779249		1878983		1978144	
16	1579871		1680650		1780915		1880640		1979791	
17	1581554		1682325		1782582		1882297		1981438	
18	1583238		1684001		1784248		1883954		1983086	
19	1584921		1685676		1785915		1885611		1984733	
20	1586605		1687351		1787581		1887268		1986380	27 4
21	1588288		1689025		1789247		1888924		1988026	
22	1589971	28 0	1690700		1790913		1890581		1989673	
23	1591653		1692374		1792578		1892237		1991319	
24	1593336		1694049		1794244		1893894		1992966	
25	1595019		1695723		1795910		1895550		1994612	
26	1596701		1697397		1797575		1897206		1996258	
27	1598383		1699071		1799240		1898861		1997904	
28	1600066		1700744		1800905		1900518		1999549	
29	1601748		1702418		1802570		1902172		2001193	
30	1603430		1704092		1804235	27 7	1903828		2002841	
31	1605112		1705765		1808599		1905483		2004486	
32	1606793		1707438		1807563		1907138		2006131	
33	1608475		1709111		1809221		1908792		2007775	
34	1610156		1710784		1810892		1910447		2009420	
35	1611838		1712457		1812556		1912102		2011065	
36	1613519		1714129		1814219		1913756		2012709	
37	1615200		1715802		1815883		1915410		2014353	
38	1616880		1717474		1817546		1917064		2015997	
39	1618581		1719147		1819210		1918717		2017641	
40	1620242		1720819		1820873		1920372		2019285	
41	1621922		1722491		1822536		1922025		2020928	
42	1623602		1724162		1824198		1923678		2022571	
43	1625283		1725834		1825861		1925331		2024214	
44	1626963		1727505		1827523		1926984		2025857	
45	1628643		1729177		1829186		1928637	27 5	2027500	
46	1630322		1730848		1830848		1930289		2029142	
47	1632002		1732519		1832510		1931941		2030784	
48	1633681		1738189		1834171		1933594		2032426	
49	1635361		1737860		1835833		1935246		2034068	
50	1637040		1737531	27 8	1837495		1935898		2035718	
51	1638719		1739201		1839156		1938549		2037351	
52	1640398		1740871		1840817		1940201		2038993	
53	1642076		1742542		1842478		1941852		2040634	
54	1643755		1744212		1844139		1943504		2042276	
55	1645434		1745882		1845800		1945156		2043917	
56	1647112		1747551		1847460		1945806		2045558	
57	1648790		1749221		1849121		1948457		2047198	
58	1650460		1750890		1850781		1950107		2048839	
59	1651447		1752560		1852442		1951758		2050479	
60	1653825		1754229		1854102		1953409		2052120	

G. m.	20 Sinus	portio unius ĩ 10	21 Sinus	portio unius ĩ 10	22 Sinus	portio unius ĩ 10	23 Sinus	portio unius ĩ 10	24 Sinus	portio unius ĩ 10.
0	2052120	27 3	2150208	27 2	2247640	27 0	2344387	26 8	2440420	26 6
1	2053760		2151837		2249258		2345994		2442014	
2	2055400		2153466		2259876		2347600		2443608	
3	2057039		2155095		2252494		2349206		2445202	
4	2058679		2156724		2254112		2350812		2446796	
5	2060319		2158353	27 1	2255729		2352418		2448390	
6	2061958		2159981		2257346		2354023		2449983	
7	2063597		2161609		2258963		2355628		2451576	
8	2065235		2163237		2260580		2357233		2453169	
9	2066874		2164865		2252197	26 9	2358838		2454762	26 5
10	2068513		2166493		2263813		2360443	26 7	2456354	
11	2070151		2168121		2255429		2362047		2457946	
12	2071789		2169748		2267045		2363651		2459538	
13	2073426		2171375		2268661		2365255		2451130	
14	2075064		2173002		2270277		2366859		2462722	
15	2076702		2174629		2271892		2368463		2464313	
16	2078339		2176256		2273507		2370066		2465904	
17	2079976		2177882		2275122		2371669		2467495	
18	2081613		2179588		2276737		2373272		2469086	
19	2083250		2181134		2278352		2374875		2470677	
20	2084887		2182760		2279966		2376478		2472267	
21	2080523		2184386		2281580		2378080		2473857	
22	2088159		2186011		2283194		2379682		2475447	
23	2089795		2187636		2284808		2381284		2477037	
24	2091431		2189261		2286422		2382886		2478627	
25	2093167		2190886		2288036		2384488		2480215	
26	2094702		2192511		2289649		3386090		2481805	
27	2096338		2194136		2291262		2387691		2483394	
28	2097973		2195760		2292875		2389292		2484983	
29	2099609		2197384		2294488		2390893		2486571	
30	2101244		2199008		2296101		2392494		2488159	
31	2102879		2200632		2297713		2394095		2489747	
32	2104514	27 2	2202256		2299325		2395695		2491335	
33	2106148		2203879		2300937		2397295		2492923	
34	2407782		2205502		2302549		2398895		2494510	
35	2109416		2207105		2304161		2400495		2496097	
36	2111050		2208748		2305772		2402094		2497684	
37	2112684		2210371	27 0	2307383		2403693		2499271	
38	2114317		2211993		2308994		2405292		2500858	26 4
39	2115950		2213615		2310605		2406891		2502444	
40	2117583		2215237		2312216	26 8	2408490	26 6	2504030	
41	2119216		2216859		2313826		2410088		2505616	
42	2120849		2218481		2315436		2411686		2507202	
43	2122482		2220109		2317046		2413284		2508788	
44	2124114		2221724		2318656		2414882		2510373	
45	2125746		2223345		2320266		2416480		2511958	
46	2427378		2224966		2321875		2418077		2513543	
47	2129010		2226587		2323484		2419674		2515128	
48	2430642		2228208		2325093		2421271		2516712	
49	2132273		2229828		2326702		2422868		2518296	
50	2133904		2231448		2328311		2424465		2519880	
51	2135535		2233068		2339919		2426061		2521464	
52	2137166		2234688		2331527		2427657		2523048	
53	2138797		2236308		2333135		2429253		2524631	
54	2140428		2237927		2334743		2430849		2526214	
55	2142058		2239546		2336351		2432445		2527797	
56	2143688		2241165		2337959		2434040		2529380	
57	2145318		2242784		2339566		2435635		2530963	
58	2146948		2244403		2341173		2437230		2532545	
59	2148578		2246022		2342780		2438825		2534127	
60	2150208		2247640		2344387		2440420		2535709	

G. m.	25 Sinus	portio uni9 2̃ 10	26 Sinus	portio uni9 2̃ 10	27 Sinus	portio uni9 2̃ 10	28 Sinus	portio uni9 2̃ 10	29 Sinus	portio unius 2̃ 10.
0	2535709	26 4	2630227	26 1	2723943	25 9	2816830	25 7	2908858	25 4
1	2537291		2631796		2725498		2818371		2910384	
2	2538872		2633364		2727053		2819912		2911910	
3	2540453		2634932		2728607		2821453		2913436	
4	2542034		2636500		2730161		2822993		2914962	
5	2543615		2638068		2731715		2824533		2916487	
6	2545196	26 3	2639635		2733269		2826073		2918012	
7	2546776		2641202		2734823		2827612		2919537	
8	2548356		2642769		2736376		2829151		2921062	
9	2549936		2644336		2737929		2830690		2922586	
10	2551516		2645903		2739482		2832229	25 6	2924110	
11	2553096		2647469		2741035		2833767		2925634	
12	2554675		2649035		2742587		2835305		2927158	
13	2556254		2650601		2744139		2836843		2928681	
14	2557833		2652167		2745691		2838381		2930204	
15	2559412		2653732		2747243		2839919		2931727	
16	2560990		2655297		2748794		2841456		2933250	
17	2562568		2656862		2750345		2842993		2934772	
18	2564146		2658427		2751896		2844530		2936294	
19	2565724		2659992		2753447		2846067		2937816	
20	2567302		2661556		2754998	25 8	2847603		2939338	
21	2568879		2663120		2756548		2849139		2940859	
22	2570456		2664684		2758098		2850675		2942380	
23	2572033		2666248		2759648		2852211		2943901	
24	2573610		2667811		2761198		2853746		2945422	
25	2575187		2669374		2762747		2855281		2946943	25 3
26	2576763		2670937		2764296		2856816		2948463	
27	2578339		2672500		2765845		2858351		2949983	
28	2579915		2674063	26 0	2767394		2859885		2951503	
29	2581491		2675625		2768943		2861419		2953022	
30	2583067		2677187		2770491		2862953		2954541	
31	2584642		2678749		2772039		2864487		2956060	
32	2586217		2680311		2773587		2866020		2957579	
33	2587792		2681872		2775135		2867553		2959097	
34	2589367	26 2	2683433		2776682		2869086		2960615	
35	2590941		2684994		2778229		2870619	25 5	2962133	
36	2592515		2686555		2779776		2872151		2963651	
37	2594089		2688115		2781323		2873683		2965168	
38	2595663		2689675		2782869		2875215		2966685	
39	2597236		2691235		2784015		2876747		2968202	
40	2598809		2692795		2785961		2878279		2969719	
41	2600382		2694355		2787507		2879810		2971235	
42	2601955		2695914		2789052		2881341		2972751	
43	2603528		2697473		2790597		2882872		2974267	
44	2605100		2699032		2792142		2884403		2975783	
45	2606672		2700591		2793687	25 7	2885933		2977299	
46	2608244		2702149		2795231		2887463		2978814	
47	2609816		2703707		2796775		2888993		2980329	
48	2611387		2705265		2798319		2890523		2981844	25 2
49	2612958		2706823		2799863		2892052		2983358	
50	2614529		2708381		2801407		2893581		2984872	
51	2616100		2709938		2802950		2895110		2986386	
52	2617671		2711495		2804493		2896638		2987900	
53	2619241		2713052		2806036		2898166		2989413	
54	2620811		2714609	25 9	2807579		2899694		2990926	
55	2622381		2716165		2809121		2901222		2992439	
56	2623951		2717721		2810663		2902750		2993952	
57	2625520		2719277		2812205		2904277		2995464	
58	2627089		2720833		2813747		2905805		2996976	
59	2628658		2722388		2815289		2907331		2998488	
60	2630227		2723943		2816830		2908858		3000000	

G. m.	30 Sinus	portio uniꝰ ĩ 10	31 Sinus	portio uniꝰ ĩ 10	32 Sinus	portio uniꝰ ĩ 10	33 Sinus	portio uniꝰ ĩ 10	34 Sinus	Portio uniꝰ secũdi 10
0	3000000	25 2	3090229	24 9	3179515	24 7	3267834	24 4	3355158	24 1
1	3001511		3091725		3180995		3269297		3356604	
2	3003022		3093221		3182475		3270760		3358050	
3	3004533		3094716		3183954		3272223		3359496	
4	3006044		3096211		3185433		3273686		3360942	
5	3007554		3097706		3186912		3275149		3362388	
6	3009064		3099200		3188391	24 6	3276611		3363833	
7	3010574		3100694		3189869		3278073		3365278	
8	3012084		3102188		3191347		3279535		3366723	
9	3013593		3103682		3192825		3280996		3366168	
10	3015102		3105176		3194303		3282457		3369612	
11	3016611		3106669		3195780		3283918		3371056	
12	3018120	25 1	3108162		3197257		3285379	24 3	3372500	
13	3019628		3109655		3198734		3286839		3373944	
14	3021136		3111148		3200211		3288299		3375387	
15	3022644		3112640		3201687		3289759		3376830	24 0
16	3024151		3114132		3203163		3291218		3378272	
17	3025658		3115624		3204639		3292677		3379714	
18	3027165		3117115		3206114		3294136		3381156	
19	3028672		3118606		3207589		3295595		3382598	
20	3030179		3120097	24 8	3209064		3297053		3384040	
21	3031685		3121587		3210538		3298511		3385481	
22	3033191		3123077		3212012		3299969		3386922	
23	3034697		3124567		3213486		3301426		3388362	
24	3036203		3126057		3214960		3302883		3389802	
25	3037708		3127547		3216434		3304340		3391242	
26	3039213		3129036		3217907		3305797		3392681	
27	3040718		3130525		3219380		3307253		3394120	
28	3042222		3132014		3220853		3308709		3395559	
29	3043726		3133503		3222326	24 5	3310165		3396998	
30	3045230		3134991		3223798		3311621		3398437	
31	3046734		3136479		3225270		3313076		3399825	
32	3048237		3137967		3226742		3314531		3401313	
33	3049740		3139454		3228213		3315986		3402751	
34	3051243		3140941		3229684		3317441	24 2	3404189	
35	3052746	25 0	3142428		3231155		3318895		3405626	
36	3054248		3143915		3232625		3320349		3407063	23 9
37	3055750		3145401		3234095		3321803		3408499	
38	3057252		3146887		3235565		3323256		3409935	
39	3058754		3148373		3237035		3324709		3411371	
40	3060256		3149859		3238505		3326162		3412807	
41	3061757		3151344		3239974		3327614		3414242	
42	3063258		3152829		3241443		3329066		3415677	
43	3064759		3154314	24 7	3242911		3330518		3417112	
44	3066259		3155799		3244329		3331970		3418546	
45	3067759		3157283		3245847		3333421		3419980	
46	3069259		3158767		3247315		3334872		3421414	
47	3070759		3160251		3248782		3336323		3422847	
48	3072258		3161734		3250249		3337774		3424280	
49	3073757		3163217		3251716		3339224		3425713	
50	3075256		3164700		3253183	24 4	3340674		3427146	
51	3076754		3166183		3254649		3342124		3428578	
52	3078252		3167665		3256115		3343573		3430010	
53	3079750		3169147		3257581		3345022		3431442	
54	3081248		3170629		3259047		3346471		3432874	
55	3082746		3172111		3260512		3347920	24 1	3434305	
56	3084243		3173592		3261977		3349368		3435736	
57	3085740		3175073		3263442		3350816		3437167	
58	3087237		3176554		3264906		3352264		3438598	
59	3088733		3178035		3266370		3353711		3440028	
60	3090229		3179515		3267834		3355158		3441458	

G. m.	35 Sinus	portio uni9 ½ 10	36 Sinus	portio uni9 ½ 10	37 Sinus	portio uni9 ½ 10	38 Sinus	portio uni9 ½ 10	39 Sinus	portio unius ½ 10
0	3441458	23 8	3526712	23 5	3610890	23 2	3693969	22 9	3775922	22 6
1	3442887		3528124		3612283		3695344		3777278	
2	3444316		3529535		3613676		3696719		3778634	
3	3445745		3530946		3615069		3698094		3779990	
4	3447174		3532357		3616462		3699468		3781345	
5	3448603		3533768		3617855		3700842		3782700	
6	3450031		3535178		3619247		3702215		3784054	
7	3451459		3536588		3620639		3703588		3785408	
8	3452887		3537998		3622031		3704961		3786762	
9	3454314		3539408		3623422		3706334		3788116	
10	3455741		3540817		3624813		3707707		3789470	
11	3457167		3542226		3626204		3709079		3790823	
12	3458593		3543635		3627594		3710451		3792176	22 5
13	3460019		3545043		3628984		3711822		3793528	
14	3461445		3546451		3630374		3713193		3794880	
15	3562871		3547859		3631764		3714564	22 8	3796232	
16	3464296		3549266		3633153		3715934		3797583	
17	3465721		3550673		3634542		3717304		3798934	
18	3467146	23 7	3552080		3635931		3718674		3800285	
19	3468570		3553487	23 4	3637319		3720044		3801636	
20	3469994		3554893		3638707	23 1	3721413		3802986	
21	3471418		3556299		3640094		3722782		3804336	
22	3472841		3557704		3641481		3724150		4805685	
23	3474264		3559109		3642868		3725518		3807034	
24	3475687		3560514		3644255		3726886		3808383	
25	3477110		3561919		3645642		3728254		3809732	
26	3478532		3563323		3647028		3729621		3811080	
27	3479954		3564727		3648414		3730988		3812428	
28	3481376		3566131		3649799		3732355		3813775	
29	3482797		3567535		3651184		3733722		3815122	
30	3484218		3568938		3652569		3735088		3816469	32 4
31	3485638		3570341		3653953		3736454		3817815	
32	3487058		3571743		3655337		3737819		3819161	
33	3488478		3573145		3656721		3739184		3820507	
34	3489898		3574547		3658105		3740549		3821853	
35	3491318		3575949		3659489		3741914	22 7	3823198	
36	3492737		3577350		3660872		3743278		3824543	
37	3494156		3578751		3662255		3744642		3825888	
38	3495575	23 6	3580152	23 3	3663637		3746006		3827232	
39	3496993		3581552		3665019	23 0	3747369		3828576	
40	3498411		3582952		3666401		3748732		3829920	
41	3499829		3584352		3667782		3750094		3831263	
42	3501247		3585751		3669163		3751456		3832606	
43	3502664		3587150		3670544		3752818		3833949	
44	3504081		3588549		3671924		3754180		3835292	
45	3505498		3589948		3673304		3755541		3836634	
46	3506914		3591346		3674684		3756902		3837976	
47	3508330		4592744		3676063		3758262		3839317	
48	3509746		3594142		3677442		3759622		3840658	
59	3511162		3595539		3678821		3760982		3841999	
50	3512577		3596936		3680200		3762342		3843340	22 3
51	3513992		3598333		3681578		3763701		3844680	
52	3515406		3599729		3682916		3765060		3846020	
53	3516820		3601125		3684334		3766419		3847359	
54	3518234		3602521		3685711		3767778	22 6	3848698	
55	3519648		3603917		3687088		3769136		3850037	
56	3521061		3605312		3688465		3770494		3851375	
57	3521474		3606707		3689841		3771851		3852713	
58	3523887		3608102	23 2	3691217	22 9	3773208		3854051	
59	3525300		3609496		3692593		3774565		3855389	
60	3526712		3610890		3693969		3775922		3856726	

G. m.	40 Sinus	portio uni9 2̃ 10	41 Sinus	portio uni9 2̃ 10	42 Sinus	portio uni9 2̃ 10	43 Sinus	portio uni9 2̃ 10	44 Sinus	Portio uni9 secūdi 10
0	3856796	22 3	3936354	22 0	4014784	21 6	4091990	21 3	4167950	20 9
1	3858063		3937671		4016081		4093266		4169203	
2	3859399		3938988	21 9	4017377		4094542		4170460	
3	3860735		3940304		4018673		4095818		4171715	
4	3862071		3941620		4919969		4097043		4172969	
5	3863407		3942936		4021265		4098368	21 2	4174223	
6	3864742		3944551		4022560		4099642		4175476	
7	3866077		3945566		4023855		4100916		4176729	
8	3867412	22 2	3946881		4025149		4102190		4177982	
9	3868746		3948195		4026443		4103464		4179235	
10	3870080		3949509		4027737		4104737		4180487	
11	3871413		3950823		4029030		4106010		4181738	
12	3872746		3953136		4030323		4107282		4182989	
13	3874079		3952449		4031616		4108554		4184240	
14	3875412		3954762		4032909	21 5	4109826		4182491	
15	3876744		3956075		4034201		4111098		4186742	20 8
16	3878076		3957387		4035492		4112369		4187902	
17	3879407		3958699		4036783		4113640		4189241	
18	3880738		3960010		4038074		4114910		4190490	
19	3882069		3961321		4039365		4116180		4191739	
20	3883400		3962632	21 8	4040656		4117450		4192988	
21	3884730		3963942		4041946		4118719		4194236	
22	3886060		3965252		4043236		4119988		4192484	
23	3887390		3966562		4044525		4121257	21 1	4196732	
24	3888719		3967871		4045818		4122525		4197979	
25	3890048		3969180		4047103		4123793		4199226	
26	3891377	22 1	3870489		4048391		4125060		4200472	
27	3892705		3971797		4049679		4126327		4201718	
28	3894033		3973105		4050967		4127594		4202964	
29	3895361		3974413		4052254		4128861		4204210	
30	3896688		3975721		4053541		4130127		4202455	20 7
31	3898015		3977028		4054828	21 4	4131393		4206699	
32	3899342		3978335		4056114		4132658		4207943	
33	3900668		3979641		4057400		4133923		4209187	
34	3901994		3980947		4058686		4135188		4210431	
35	3903320		3882253		4059971		4136453		4211675	
36	3904645		3983558		4061256		4137717		4212918	
37	3905970		3984863		4062540		4138981		4214160	
38	3907295		3986168	21 7	4063824		4140244		4215402	
39	3908619		3987472		4065108		4141507		4216644	
40	3909943		3888776		4066392		4142770	21 0	4217886	
41	3911266		3990080		4067675		4144032		4219127	
42	3912589		3991383		4068958		4145294		4220368	
43	3913912		3992686		4070240		4146556		4221623	
44	3915235		3993989		4071522		4147817		4222848	
45	3916558	22 0	3995291		4072804		4144978		4224088	
46	3917880		3996593		4074086		4150338		4225327	
47	3919202		3997894		4075367		4151598		4226566	
48	3820523		3999195		4076648	21 3	4152858		4227805	20 6
49	3921844		4000496		4077928		4154118		4229043	
50	3923165		4001797		4079208		4155377		4230281	
51	3924485		4003097		4080487		4156636		4231518	
52	3925805		4004397		4081766		4157894		4232755	
53	3927125		4005697		4083045		4159152		4233992	
54	3928445		4006996		4084324		4350410		4235229	
55	3929764		4008295		4085603		4161668		4236465	
56	3931083		4009594	21 6	4086881		4162925		4237701	
57	3932401		4010392		4088159		4164182	20 9	4238936	
58	3933719		4012190		4089436		4165438		4240171	
59	3935037		4013488		4090713		4166694		4241406	
60	3936354		4014784		4091990		4157950		4242641	

G. m.	45 Sinus	portio unius 10	46 Sinus	portio unius 10	47 Sinus	portio unius 10	48 Sinus	portio unius 10	49 Sinus	portio unius 10.
0	4242641	20 6	4316039	20 2	4388122	19 8	4458869	19 5	4528258	19 1
1	4243875		4317251		4389312		4460036		4529403	
2	4245109		4318463		4390502		4461203		4530547	
3	4246342		4319674		4391691		4462370		4531691	
4	4247575		4320885		4392880		4463537	19 4	4532835	
5	4248808	20 5	4322096		4394069		4464703		4533978	
6	4250040		4323306		4395257		4465869		4535121	19 0
7	4251272		4324516		4396445		4467034		4536263	
8	4252503		4325726		4397633		4468199		4537405	
9	4253736		4326935		4398820		4469364		4538547	
10	4254965		4328144		4400007		4470528		4539689	
11	4256195		4329353	20 1	4401193		4471692		4540830	
12	4257425		4330561		4402379		4472855		4541970	
13	4258655		4331769		4403565		4474018		4543110	
14	4259884		4332977		4404750		4475181		4544250	
15	4261113		4334184		4405935		4476344		4545390	
16	4262341		4335391		4407120	19 7	4477506		4546529	
17	4263569		4336597		4408304		4478667		4547667	
18	4264797		4337803		4409488		4479828		4548805	
19	4266025		4339009		4410672		4480989		4549943	
20	4267252		4340214		4411854		4482150	19 3	4551081	
21	4268479	20 4	4341419		4413036		4483310		4552218	
22	4269705		4342623		4414218		4484470		4553355	18 9
23	4270931		4343827		4415400		4485629		4554491	
24	4272157		4345031		4416582		4486788		4555627	
25	4273382		4346235		4417764		4487947		4556763	
26	4274607		4347438	20 0	4418944		4489105		4557898	
27	4275831		4348640		4420124		4490263		4559033	
28	4277055		4349842		4421304		4491420		4560168	
29	4278279		4351044		4422484		4492777		4561302	
30	4279503		4352246		4423664		4493534		4562436	
31	4280726		4353447		4424843	19 6	4494890		4563569	
32	4281949		4354648		4426021		4496046		4564702	
33	4283171		4355848		4427199		4497202		4565835	
34	4284393		4357048		4428377		4498357		4566965	
35	4285615		4358248		4429555		4499512	19 2	4568099	
36	4286836		4359447		4430732		4500666		4569230	
37	4288057		4360646		4431909		4501820		4570361	
38	4289278	20 3	4361845		4433085		4502974		4571492	18 8
39	4290498		4363043		4434261		4504127		4572622	
40	4291718		4364241		4435437		4505280		4573752	
41	4292937		4365439		4436612		4506432		4574881	
42	4294154		4366636		4437787		4507584		4576010	
43	4295375		4367833		4438961		4508736		4577139	
44	4296594		4369030	19 9	4440135		4509888		4578267	
45	4297812		4370226		4441309		4511939		4579395	
46	4299030		4371422		4442482		4512189		4580522	
47	4300247		4372617		4443655		4513339		4581649	
48	4301464		4373812		4444828	19 5	4514489		4582776	
49	4302681		4375007		4446000		4515639		4583903	
50	4303897		4376201		4447172		4516788		4585029	
51	4305113		4377395		4448343		4517937	19 1	4586155	
52	4306328		4378588		4449514		4519085		4587280	
53	4307543		4379781		4450685		4520233		4588405	18 7
54	4308758		4380974		4451855		4521381		4589529	
55	4309973	20 2	4382166		4453025		4522528		4590653	
56	4311187		4383358		4454194		4523675		4591776	
57	4312400		4384549		4455363		4524821		4592899	
58	4313613		4385740		4456532		4525967		4594022	
59	4314826		4386931		4457701		4527113		4595145	
60	4316039		4388122		4457869		4528258		4596267	

G. m.	50 Sinus	portio uni9 2̄ 10	51 Sinus	portio uni9 2̄ 10	52 Sinus	portio uni9 2̄ 10	53 Sinus	portio uni9 2̄ 10	54 Sinus	Portio unig secūdi 10
0	4596267	18 7	4662876	18 3	4728064	17 9	4791813	17 5	4854102	17 1
1	4597389		4663974		4729138		4792863		4855128	
2	4598510		4665072		4730212		4793913		4856153	
3	4599631		4666169		4731286		4794962		4857178	
4	4600751		4567266		4732359		4795011		4858202	
5	4601871		4668363		4733432		4797060		4859226	
6	4602991		4669459		4734504		4798180		4860250	
7	4604110		4670555		4735576		4799156		4861273	
8	4605229		4671650		4736648		4800203		4862296	17 0
9	4606348	18 6	4672745		4737719		4801250		4863318	
10	4607460		4673840	18 2	4738790	17 8	4802297	17 4	4864340	
11	4608584		4674934		4739860		4803343		4865362	
12	4609701		4576028		4740930		4804389		4866383	
13	4610818		4577122		4741999		4805434		4867404	
14	4611935		4678215		4743068		4806479		4868424	
15	4613051		4679308		4744137		4807523		4869444	
16	4614167		4570500		4746205		4808567		4870453	
17	4615282		4681492		4745273		4809611		4871482	
18	4616397		4682584		4747341		4810554		4872501	
19	4617512		4683675		4748408		4811697		4873519	
20	4618626		4584766		4749475		4812739		4874537	
21	4619740		4685856		4750541		4813781		4875554	
22	4620853		4686946		4751607		4814823		4876571	
23	4621966		4688035		4752623		4815864		4877588	16 9
24	4623079	18 5	4689124		4753738		4816905	17 3	4878604	
25	4624191		4690213	18 1	4754803	17 7	4817945		4879620	
26	4625303		4691301		4755867		4818985		4880635	
27	4626414		4692389		4756931		4820025		4881650	
28	4627525		4693476		4757994		4821064		4882605	
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31	4630857		4696736		4761182		4824179		4885706	
32	4631966		4697822		4762244		4825217		4886719	
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45	4646355		4711902		4776012		4838667		4899849	
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54	5669694		5703095		5734759		5764675		5792835	
55	5670265		5703637		5735272	8 5	5765159		5793290	
56	5670835		5704178		5735784		5765642		5793744	
57	5671405		5704719		5736296		5766125	8 0	5794198	
58	5671974		5705259		5736807		5766607		5794651	7 5
59	5672543		5705799		5737318		5767089		5795103	
60	5673112		5706339		5737829		5761570		5795555	

G. m.	75 Sinus	portio uni9 ĩ 10	76 Sinus	portio uni9 ĩ 10	77 Sinus	portio uni9 ĩ 10	78 Sinus	portio uni9 ĩ 10	79 Sinus	portio unius ĩ 10
0	5795555	7 5	5821774	7 0	5846221	6 5	5868886	5 0	5889764	5 6
1	5796006		5822196		5846613		5869248		5890097	
2	5796457		5822618		5847005		5869610		5490429	
3	5796908		5823039		6847396		5869972		5890761	
4	5797358		5823459		5847787		5870333		5891092	
5	5797808		5823879		5848178		5870694		5891423	
6	5798257		5824298		5848568		5871054		5891753	
7	5798706		5824717		5848957		5871414		5892083	
8	5799154		5825136		5849346		5871773		5892412	
9	5799601		5825554		5849734		5872132		5892741	
10	5800048	7 4	5825972		5850122		5872490		5893069	
11	5800494		5826089		5850509		5872847		5893397	
12	5800940		5826306	6 9	5850896	6 4	5873204		5893724	
13	5801386		5827222		5851282		5873561	5 9	5894051	5 4
14	5801831		5827637		5851668		5873917		5894377	
15	5802276		5828082		5852054		5874273		5894703	
16	5802720		5828466		5852439		5874528		5895028	
17	5803164		5828880		5852321		5874983		5895353	
18	5803607		5829294		5853208		5875337		5895677	
19	5804050		5829707		5853591		5875691		5896001	
20	5804492		5830120		5853974		5876044		5896324	
21	5804933		5830532		5854356		5876396		5896647	
22	5805474		5830944		5854738		5876748		5896969	
23	5805815	7 3	5831355		5855119		5877100		5897291	
24	5806255		5831766	6 8	5855500		5877451		5897612	
25	5806695		5832176		5855881	6 3	5877802	5 8	5897933	7 3
26	5807134		5832586		5856261		5878152		5898253	
27	5807573		5832995		5856641		5878502		5898573	
28	5808011		5833404		5857020		5878851		5898892	
29	5808449		5835812		5857398		5879200		5899211	
30	5808886		5834220		5857776		6879548		5899529	
31	5809323		5834627		5858153		5879896		5399847	
32	5809759		5835034		5858530		5880243		5900164	
33	5810195		5835440		5858907		5880590		5900481	
34	5810630		5835846		5859283		5880936		5900797	
35	5811065	7 2	5836251		5859659		5881282		5901113	
36	5811499		5836656	6 7	5860034		5881627		5901428	
37	5811933		5837060		5860409	6 2	5881972	5 7	5901743	5 2
38	5812366		5837464		5860783		5882316		5902057	
39	5812799		5837867		5861156		5882660		5902371	
40	5813231		5838270		5861529		5883003		5902684	
41	5813563		5838672		5861901		5883346		5902997	
42	5814094		5839074		5862273		5883688		5903309	
43	5814525		5839475		5862645		5884030		5903621	
44	5814955		5839876		5863016		5884371		5903932	
45	5815385		5840276		5863387		5884712		5904243	
46	5815814		5840676		5863757		5885052		5904553	
47	5816243	7 1	5841075		5864127		5885392		5904863	
48	5816671		5841474	6 6	5864496	6 2	5885731		5905172	
49	5817099		5841872		5864865	6 1	5886070	5 7	5905481	5 2
50	5817527		5842270		5865233		5886409	5 6	5905790	5 1
51	5818954		5842661		5865600		5886747		5906098	
52	5818381		5843064		5865967		5887084		5906405	
53	5818807		5843460		5866334		5887421		5906712	
54	5819232		5843856		5866700		5887757		5907018	
55	5819657		5844252		5867066		5888093		5907324	
56	5820081		5844647		5867431		5888428		5907629	
57	5820505		5845041		5867796		5888763		5907934	
58	5820928		5845435		5868160		5889097		5908230	
59	5821351		5845828		5868523		5889431		5908542	
60	5821774		5846221		5868886		5889764		5908845	

E

G. m.	80 Sinus	portio unius 2 10	81 Sinus	portio unius 2 10	82 Sinus	portio unius 2 10	83 Sinus	portio unius 2 10	84 Sinus	Portio unius secundi 10
0	5908845	5 1	5926130	4 6	5941608	4 0	5955277	3 5	5967131	3 0
1	5909148	5 0	5926403	4 5	5941850		5955489		5967313	
2	5909450		5926675		5942092		5955701		5967495	
3	5909742		5926947		5942334		5955912		5967676	
4	5910053		5927218		5942575		5956123		5967857	
5	5910354		5927489		5942816		5956334		5968037	
6	5910654		5927759		5943056		5956544		5968216	
7	5910954		5928029		5943296		5956754		5968395	
8	5911253		5928298		5943535		5956963		5968574	
9	5911552		5928567		5943774		5957171		5968752	
10	5911851		5928833		5944012		5957379		5968930	
11	5912149		5929103		5944249		5957586		5969107	
12	5912447		5929370		5944486		5957793	3 4	5969284	2 9
13	5912744	4 9	5929637	4 4	5944723	3 9	5957999		5969460	
14	5913040		5929903		5944959		5958205		5969636	
15	5913336		5930169		5945195		5958411		5969811	
16	5913631		5930434		5945430		5958616		5969985	
17	5913926		5930699		5944665		5958820		5970159	
18	5914220		5930963		5945899		5959024		5970333	
19	5914514		5931227		5946132		5959227		5970506	
20	5914808		5931490		5946365		5959430		5970679	
21	5915101		5931753		5946597		5959632		5970851	
22	5915383		5932015		5946829		5959834		5971023	
23	5915685		5932277		5947061		5960035		5971194	
24	5915976		5932538		5947292		5960236		5971364	2 8
25	5916267	4 8	5932799	4 3	5947523	3 8	5960437	3 3	5971534	
26	5916557		5933059		5947753		5960637		5971703	
27	5916847		5933319		5947983		5960836		5971872	
28	5917136		5933578		5948212		5961035		5972041	
29	5917425		5933835		5948441		5961233		5972209	
30	5917714		5934095		5948669		5961431		5972377	
31	5918002		5934352		5948896		5961628		5972544	
32	5918289		5934609		5949123		5961825		5972711	
33	5918576		5934866		5949350		5962021		5972877	
34	5918862		5935122		5949566		59[illegible]2217		5973042	
35	5919148		5935378		5949802		5962413		5973207	2 7
36	5919433		5935633		5950027		5962608	3 2	5973371	
37	5919718	4 7	5935888	4 2	5950252	3 7	5962802		5973535	
38	5920002		5936142		5950476		5962996		5973699	
39	5920287		5936396		5950699		5963189		5973862	
40	5920570		5936649		5950922		5963382		5974025	
41	5920853		5936902		5951144		5963574		5974187	
42	5921135		5937154		5951366		5963766		5974349	
43	5921417		5937406		5951588		5963957		5974510	
44	5921698		5937657		5951809		5964148		5974670	
45	5921979		5937908		5952030		5964338		5974830	
46	5922259		5938158		5952258		5964528		5974989	
47	5922539		5938408		5952470		5964717		5975148	2 6
48	5922818		5938657		5952689	3 6	5964906	3 1	5975306	
49	5923095	4 6	5938905	4 1	5952907		5965094		5975464	
50	5923375		5939154		5953125		5965282		5975622	
51	5923653		5939401		5953342		5965469		5975779	
52	5923930		5939648		5953559		5965656		5975936	
53	5924207		5939895		5953775		5965842		5976092	
54	5924483		5940141		5953991		5966028		5976247	
55	5924759		5940387		5954207		5966213		5976402	
56	5925034		5940632		5954422		5966397		5976556	
57	5925309		5940877		5954637		5966581		5976710	
58	5925583		5941121		5954851		5966765		5976863	
59	5925857		5941365		5955064		5966948		5977016	
60	5926130		5941608		5955277		5967131		5977169	

G. m.	85 Sinus	portio unius ʒ 10	86 Sinus	portio unius ʒ 10	87 Sinus	portio unius ʒ 10	88 Sinus	portio unius ʒ 10	89 Sinus	portio unius ʒ 10
0	5977169	2 5	5985384	2 0	5991777	1 5	5996345	1 0	5999086	0 5
1	5977321		5985505		5991868		5996405		5999116	
2	5977472		5985626		5991959		5996465		5999146	
3	5977623		5985747		5992049		5996525		5999175	
4	5977773		5985867		5992138		5996584		5999204	
5	5977923		5985987		5992227		5996643		5999233	
6	5978072		5986106		5992315		5996701		5999260	
7	5978221		5986225		5992403		5996759		5999287	
8	5978369		5986343		5992491		5996816		5999314	0 4
9	5978517		5986460		5992578		5996873	0 9	5999340	
10	5978665		5986577	1 9	5992665	1 4	5996929		5999366	
11	5978812	2 4	5986693		5992751		5996984		5999391	
12	5978958		5986809		5992837		5997039		5999416	
13	5979104		5986924		5992922		5997094		5999440	
14	5979249		5987039		5993006		5997148		5999463	
15	5979394		5987154		5993090		5997202		5999486	
16	5979538		5987268		5993173		5997255		5999508	
17	5979682		5987385		5993256		5997308		5999530	
18	5979825		5987495		5993338		5997360		5999552	
19	5979968		5987607		5993420		5997411		5999573	
20	5980110		5987719		5993502		5997462	0 8	5999594	0 3
21	5980251		5987830		5993583		5997512		5999614	
22	5980392		5987941	1 8	59936 4	1 3	5997562	0 8	5999634	
23	5980533	2 3	5988051		5993744		5997611		5999653	
24	5980673		5988161		5993823		5997660		5999671	
25	5980813		5988271		5993902		5997709		5999689	
26	5980952		5988380		5993980		5997757		5999706	
27	5981091		5988488		5994058		5997805		5999723	
28	5981229		5988696		5994135		5997852		5999740	
29	5981367		5988703		5994212		5997898		5999756	
30	5981504		5988810		5994289		5997944		5999772	
31	5981640		5988916		5994365		5997989		5999787	
32	5981776		5989022		5994440		5998034	0 7	5999802	0 2
33	5981912		5989127		5994515		5998078		5999816	
34	5982047		5989232	1 7	5994589	1 2	5998122		5999829	
35	5982182	2 2	5989336		5994663		5998166		5999842	
36	5982316		5989440		5994736		5998209		5999854	
37	5982450		5989543		5994809		5998251		5999866	
38	5982583		5989646		5994881		5998293		5999877	
39	5982716		5989748		5994953		5998334		5999888	
40	5982848		5989850		5995025		5998375		5999899	
41	5982979		5989951		5995096		5998415		5999909	
42	5983110		5990052		5995166		5998455		5999918	
43	5983241		5990152		5995236		5998494		5999927	0 1
44	5983371		5990252		5995305		5998533		5999935	
45	5983501		5990351	1 6	5995374	1 1	5998572	0 6	5999943	
46	5983630		5990440	1 6	5995442		5998610		5999951	
47	5983759	2 1	5990547	1 6	5995510		5998647		5999958	
48	5983887		5990645		5995577		5998684		5999964	
49	5984014		5990742		5995644		5998720		5999970	
50	5984141		5990839		5995710		5998756		5999975	
51	5984267		5990935		5995776		5998791		5999980	
52	5984393		5991031		5995841		5998826		5999984	
53	5984519		5991126		5995906		5998860		5999988	
54	5984644		5991220		5995970		5998894		5999991	
55	5984769		5991314		5996034		5998927		5999994	0 0
56	5984893		5991407		5996094		5998960	0 5	5999996	
57	5985017		5991500		5996160	1 0	5998992		5999998	
58	5985140	2 0	5991593	1 5	5996222		5999024		5999999	
59	5985262		5991685		5996284		5999055		6000000	
60	5985384		5991777		5996345		5999086		6000000	0 0

Sequitur altera Tabula Sinuū ad 10000000 particulas cōputata.

G. / m.	0 Sinus.	port. uni9 ī 10.	1 Sinus.	port. uni9 ī 10	2 Sinus.	port. uni9 ī 10.	3 Sinus.	port. uni9 ī 10.	4 Sinus.	portio unius ī 10.
0	0		174524	48 5	348995	48 4	523360	48 4	697565	48 4
1	2909	48 5	177433		351902		526265		700467	
2	5818		180341		354809		529170		703369	
3	8727		183250		357716		532075		706270	
4	11636		186158		360623		534980		709172	
5	14544		189066		363530		537884		712073	
6	17453		191975		366437		540789		714975	
7	20362		194883		369344		543694		717876	
8	23271		197792		372251		546598		720777	
9	26180		200700		375158		549503		723678	
10	29088		203608		378064		552407		726579	
11	31997		206517		380971		555312		729480	
12	34906		209425		383878		558216		732381	
13	37815		212333		386785		561120		735282	48 3
14	40724		215241		389692		564024		738183	
15	43632		218149		392598		566928		741084	
16	46541		221057		395505		569832		743985	
17	49450		223965		398412		572736		746886	
18	52359		226873		401318		575640		749787	
19	55268		229781		404225		578544		752688	
20	58177		232689		407131		581448		755588	
21	61086		235597		410038		584352		758489	
22	63995		238505		412944		587256		761389	
23	66904		241413		415851		590160		764290	
24	69813		244321		418757		593064		767180	
25	72721		247229		421663		595967		770090	
26	75630		250137		424570		598871		772991	
27	78539		253045		427476		601775		775891	
28	81448		255953		430382		604678		778791	
29	84357		258861		433288		607582		781691	
30	87265		261769		436194		610485		784591	
31	90174		264677		439100		613389		787491	
32	93083		267585		442006		616292		790391	
33	95992		270493		444912		619196		793291	
34	98901		273401		447818		622099		796191	
35	101809		276308		450724		625002		799090	
36	104718		279216		453630		627905		801990	
37	107627		282124		456536		630808		804889	
38	110536		285032		459442		633711		807789	
39	113445		287940		462348		636614		810688	
40	116353		290847		465253		639517		813587	
41	119262		293755		468159		642420		816486	
42	122171		296663		471065		645323		819385	
43	125079		299570	48 4	473970		648226		822284	
44	127988		302478		476876		651129		825183	
45	130896		305385		479781		654031		828082	
46	133805		308293		482687		656934		830981	
47	136714		311200		485592		659837		833880	
48	139622		314108		488498		662739		836778	
49	142531		317015		491403		665042		839677	
50	145439		319922		494308		668544		842575	
51	148348		322830		497214		671447		845474	
52	151257		325737		500119		674349		848372	
53	154165		328645		503024		677251		851271	
54	157074		331552		505929		680153		854169	
55	159982		334459		508834		683055		857067	
56	162891		337367		511740		685957		859965	
57	165799		340274		514645		688859		862863	
58	168708		343181		517550		691761		865761	
59	171616		346088		520455		694663		868659	
60	174529		348995		523360		697565		871557	

G m.	5 Sinus	portio uni9 2 10	6 Sinus	portio uni9 2 10	7 Sinus	portio uni9 2 10	8 Sinus	portio uni9 2 10	9 Sinus	portio unius 2 10
0	871557	48 3	1045285	48 2	1218693	48 1	1391731	48 0	1564345	47 9
1	874455		1048178		1221580		1394612		1567218	
2	877353		1051071		1224467		1397492		1570091	
3	880250		1053964		1227354		1400373		1572964	
4	883148		1056857		1230231		1403253		1575837	
5	886045		1059749		1233128		1406133		1578709	
6	888943		1052642		1236015		1409013		1581581	
7	891840		1065534		1238901		1411893		1584453	
8	894737		1068426		1241788		1414772		1587325	
9	897634		1071318		1244674		1417652		1590197	
10	900531		1074210		1247560		1420531		1593069	
11	903428		1077102		1250446		1423410		1595941	
12	906325		1079994		1253332		1426289		1598812	
13	909222		1082886		1255218		1429168		1601684	
14	912119		1085778		1259104		1432047		1604555	
15	915016		1088669		1261990		1434926		1607426	
16	917913		1091561		1264876		1437805		1610297	47 8
17	920809		1094452		1267791		1440584		1613168	
18	923706		1097344		1270647		1443562		1616038	
19	926602		1100235		1273532		1446441		1618909	
20	929498		1103126		1276417		1449319		1621779	
21	932395		1106017		1279302		1452197		1624649	
22	935291		1108908		1282187		1455075		1627519	
23	938187		1111799		1285072		1457953		1630389	
24	941083		1114690		1287957		1460831		1633259	
25	943979		1117580		1290841		1463708		1636129	
26	946875		1118471		1293726		1466586		1638999	
27	949771		1123361		1296610		1469453		1641868	
28	952667		1126252		1299494		1472340		1644738	
29	955563		1129142		1302378		1475217	47 9	1647607	
30	958458		1132032		1305252		1478094		1650476	
31	961354		1134922		1308146		1480971		1653345	
32	954249		1137812		1311030		1483848		1656214	
33	967144		1140702		1313914		1486724		1659082	
34	970039		1143592		1316798		1489601		1661951	
35	972934		1146482		1319681		1492477		1664819	
36	975829		1149372		1322564		1495353		1667687	
37	978724	48 2	1152261		1325447		1498229		1670555	
38	981619		1155151		1328330		1501105		1673423	
39	984514		1158040		1331213	48 0	1503981		1676291	
40	987408		1160929		1334096		1506857		1679159	
41	990303		1163818		1336979		1509733		1682027	
42	993198		1166707	48 1	1339862		1512608		1684894	
43	996092		1169596		1342744		1515484		1687761	
44	998987		1172485		1345627		1518359		1690628	
45	1001881		1175374		1348509		1521234		4693495	
46	1004775		1178263		1351392		1524109		1696362	
47	1007669		1181151		1354274		1526984		1699229	
48	1010563		1184040		1357156		1529859		1702095	
49	1013457		1186928		1360038		1532734		1704962	
50	1016351		1189816		1362920		1535608		1707828	
51	1019245		1192704		1365802		1538482		1710694	
52	1022139		1195592		1368683		1541356		1713560	
53	1025032		1198480		1371564		1544230		1716426	
54	1027926		1201368		1374446		1547104		1719292	
55	1030819		1204255		1377327		1549978		1722157	
56	1033713		1207143		1380208		1552852		1725022	
57	1036605		1210031		1383089		1555725		1727887	
58	1039499		1212918		1385970		1558599		1730752	47
59	1042392		1215806		1388851		1561472		1733617	
60	1045285		1218693		1391731		1564345		1736482	

G. m.	10 Sinus	portio uniꝰ 2ᵃ 10	11 Sinus	portio uniꝰ 2ᵃ 10	12 Sinus	portio uniꝰ 2ᵃ 10	13 Sinus	portio uniꝰ 2ᵃ 10	14 Sinus	Portio uniꝰ secũdi 10
0	1736482	47 7	1908090	47 6	2079117	47 4	2249511	47 2	2419219	47 0
1	1739347		1910945		2081962		2252345		2422041	
2	1742211		1913800		2084807		2255179		2424863	
3	1745075		1916655		2087652		2258013		2427685	
4	1747939		1919510		2090497		2260847		2430507	
5	1750803		1922365		2093342		2263680		2433329	
6	1753667		1925220		2096186		2266512		2436150	
7	1756531		1928074		2099030		2269346		2438971	
8	1759394		2930928		2101874		2272179		2441792	
9	1762258		1933782		2104718		2275012		2444613	
10	1765121		1936636		2107562		2277844		2447434	
11	1767984		1939490		2110405		2280676		2450254	
12	1770847		1942344		2113248		2283508		2453074	
13	1773710		1945197		2116091		2286340		2455894	
14	1776573		1948050		2118934		2289163		2458714	
15	1779435		1950903		2121777		2292004		2461533	
16	1782298		1953756	47 5	2124620		2294835		2464352	
17	1785160		1956609		2127462		2297666		2467171	
18	1788022		1959462		2130304		2300497		2469990	
19	1790884		1962314		2133146		2303328		2472809	
20	1793746		1965166		2135988		2306159		2475628	
21	1796608		1968018		2138830		2308989		2478446	
22	1799469		1970870		2141671		2311819		2481264	
23	1802331		1973722		2144512		2314549		2484082	
24	1805192		1976574		2147353		2317479		2486900	
25	1808053		1979425		2150194	47 3	2320309		2489717	
26	1810914		1982276		2153035		2323138		2492534	
27	1813774		1985127		2155876		2325967		2495351	46 9
28	1816634		1987978		2158716		2328799	47 1	2498168	
29	1819495		1990829		2161556		2331625		2500984	
30	1822355		1993679		2164396		2334454		2503800	
31	1825215		1996530		2167236		2337282		2506616	
32	1828075		1999380		2170076		2340110		2509432	
33	1830935		2002230		2172916		2342938		2512248	
34	1833795		2005080		2175755		2345766		2515064	
35	1836654		2007930		2178594		2348594		2517879	
36	1839513		2010780		2181433		2351421		2520694	
37	1842372		2013629		2184272		2354248		2523509	
38	1845231	47 6	2016478		2187111		2357075		2526324	
39	1848090		2019327		2189949		2359902		2529138	
40	1850949		2022176		2192787		2362729		2531952	
41	1853808		2025025		2195625		2365555		2544766	
42	1856666		2027874		2198463		2368381		2547580	
43	1859524		2030722		2201300		2371207		2540393	
44	1862382		2033570		2204137		2374033		2543206	
45	1865240		2036418		2206974		2376859		2546019	
46	1868098		2039266		2209811		2379684		2548832	
47	1870956		2042114		2212648		2382509		2551645	
48	1873813		2044962		2215485		2385334		2554458	
49	1876670		2047809		2218322		2388159		2557270	
50	1879527		2050656		2221158		2390983		2560082	
51	1882384		2053503	47 4	2223994		2393808		2562894	
52	1885241		2056350		2226830		2396632		2565706	
53	1888098		2059197		2229666		2399456		2568517	
54	1890954		2062043		2232502		2402280		2571328	
55	1893810		2064889		2235337		2405104		2574139	46 8
56	[illegible]896666		2077735		2238172		2407927		2576950	
57	1[illegible]99522		2070581		2241007	47 2	2410750		2579760	
58	19[illegible]2378		2073427		2243842		2413573	47 0	2582570	
59	190[illegible]234		2076272		2246677		2416396		2585380	
60	1908[illegible]20		2079117		2249511		2419219		2588190	

G. m.	15 Sinus	portio uni9 z̃ 10	16 Sinus	portio uni9 z̃ 10	17 Sinus	portio uni9 z̃ 10	18 Sinus	portio uni9 z̃ 10	19 Sinus	portio unius z̃ 10.
0	2588190	46 8	2756373	46 6	2923717	45 4	3090170	46 1	3255682	45 8
1	2591000		2759169		2926499		3092936		3258432	
2	2593809		2761965		2929280		3095702		3261182	
3	2596618		2764761		2932061		3098468		3263931	
4	2599427		2767556		2934842	46 3	3101234		3266681	
5	2602236		2770351		2937623		3103999		3269430	
6	2605045		2773146		2940403		3106764		3272179	
7	2607853		2775941		2943183		3109529		3274927	
8	2610661		2778735		2945963		3112294		3277675	
9	2613469		2781529		2948743		3115058		3280423	
10	2616277		2784323		2951523		3117822		3283171	
11	2619084		2787117		2954302		3120586		3288918	
12	2621891		2789911		2957081		3123349		3288665	
13	2624698		2792704		2959860		3126112		3291412	
14	2627505		2795497		2962630		3128875	46 0	3294159	
15	2630312		2798290	46 5	2965416		3131638		3296906	
16	2633118		2801082		2968194		3134400		3299652	
17	2635924		2803874		2970972		3137162		3302398	
18	2638730		2806666		2973750		3139924		3305144	
19	2641536		2809458		2976527		3142686		3307889	
20	2644342		2812250		2979305		3145448		3310634	45 7
21	2647147		2815041		2982081		3148209		3313379	
22	2649952		2817832		2984857		3150970		3316123	
23	2652757	46 7	2820623		2987633		3153731		3318867	
24	2655562		2823414		2990409		3156491		3321611	
25	2658366		2826204		2993185		3159251		3324355	
26	2661170		2828994		2995960		3162011		3327098	
27	2663974		2831784		2998735	46 2	3164770		3329841	
28	2666777		2834574		3001510		3167529		3332585	
29	2669580		2837364		3004284		3170288		3335327	
30	2672383		2840153		3007058		3173047		3338069	
31	2675186		2842942		3009832		3175805		3340811	
32	2677989		2845731		3012606		2178563		3343553	
33	2680792		2848520		3015380		3181321		3346294	
34	2683595		2851308		3018153		3184079		3349035	
35	2686397		2854096		3020926		3186837		3351776	
36	2689199		2856884		3023699		3189594		3354516	
47	2692001		2859672		3026472		3192351	45 9	3357256	
38	5694802		2862459		3029244		3195108		3359996	
39	2697603		2865246		3032016		3197864		3362739	
40	2700404		2868033	46 4	3034788		3200620		3365475	
41	2703205		2870819		3037559		3203375		3368214	45 6
42	2706005		2873605		3040330		3206130		3370953	
43	2708805		2876391		3043101		3208885		3373691	
44	2711605		2879177		3045872		3211640		3376429	
45	2714405		2881963		3048643		3214395		3379167	
46	2717204		2884748		3051413		3217150		3381905	
47	2720003		2887533		3054183		3219904		3384642	
48	2722802	46 6	2890318		3056953		3222658		3387379	
49	2725601		2893103		3059723		3225412		3399116	
50	2728400		2895888		3062492		3228165		3392852	
51	2731198		2898672		3065261	46 1	3230918		3395588	
52	2733996		2901456		3068030		3233671		3398324	
53	2736794		2904240		3070798		3236423		3401060	
54	2739592		2907023		3073566		3239175		3403795	
55	2742389		2909806		3076334		3241927		3406530	
56	2745186		2912589		3079102		3244679		3409265	
57	2747983		2915371		3081869		3247430		3411999	
58	2750780		2918153		3084636		3250181	45 8	3414733	
59	2753577		2920935		3087403		3252932		3417467	
60	2756373		2923717		3090170		3255682		3420201	

G. m.	20 Sinus	portio unius 2 10	21 Sinus	portio unius 2 10	22 Sinus	portio unius 2 10	23 Sinus	portio unius 2 10	24 Sinus	Portio unius secūdi 10
0	3420201	45 6	3583679	45 3	3746066	45 0	3907311	44 6	4067366	44 3
1	3422934		3586395		3748763	44 9	3909989		4070023	
2	3425667		3589110		3751460		3912666		4072680	
3	3428400	45 5	3591825	45 2	3754156		3915343		4075337	
4	3431133		3594540		3756852		3918020		4077993	
5	3433865		3597254		3759548		3920696		4080649	
6	3436597		3599968		3762243		3923372		4083305	
7	3439329		3602681		3764938		3926048		4085960	
8	3442060		3605395		3767633		3928723		4088615	44 2
9	3444791		3608108		3770327		3931398		4091269	
10	3447522		3610821		3773021		3934072		4093923	
11	3450253		3613533		3775715		3936746		4096577	
12	3452983		2616245		3778408		3939420		4099231	
13	3455713		3618957		3781101		3942093		4101884	
14	3458442		3621669		3783794		3944766		4104537	
15	3461171		3624380		3786486		3947439	44 5	4107189	
16	3463900		3627091		3789178		3950112		4109841	
17	3466629		3629802		3791870		3952784		4112493	
18	3469357		3632512		3794562		3955456		4115144	
19	3472085		3635222		3797253		3958128		4117795	
20	3474813		3637932		3799944	44 8	3960799		4120446	
21	3477540		3640642		3802635		3963470		4123096	
22	3480267		3643351	45 1	3805325		3966140		4125746	
23	3482994	45 4	3646060		3808015		3968810		4128395	
24	3485724		3648768		3810704		3971480		4131044	44 1
25	3488447		3651476		3813393		3974149		4133693	
26	3491173		3654184		3816082		3976818		4136341	
27	3493899		3656892		3818771		3979487		4138989	
28	3496624		3659599		3821459		3982155		4141637	
29	3499349		3662306		3824147		3984823		4144285	
30	3502075		3665012		3826834		3987491		4146932	
31	3504799		3667718		3829521		3990159		4149579	
32	3507523		3670424		3832208		3992826		4152226	
33	3510247		3673130		3834895		3995493	44 4	4154872	
34	3512971		3675835		3837581		3998159		4157518	
35	3515694		3678541		3840267		4000825		4160163	
36	3518417		3681246		3842953		4003491		4162808	
37	3521140		3683951		3845638		4006156		4165453	
38	3523862		3686655		3848323	44 7	4008821		4168097	
39	3526584		3689359		3851008		4011486		4170741	
40	3529306		3692052		3853692		4014150		5173385	
41	3532027		3694765	45 0	3856376		4016814		4176028	
42	3534748		3697468		3859060		4019478		4178671	44 0
43	3537469	45 3	3700170		3861743		4022141		4181413	
44	3549190		3702872		3864426		4024804		4183955	
45	3542910		3705574		3867109		4027467		4186597	
46	3545630		3708276		3869791		4030130		4189239	
47	3548350		3710977		3872473		4032792		4191880	
48	3551070		3713678		3875155		4035454		4194521	
49	3553789		3716379		3877837		4038115		4197162	
50	3556508		3719080		3880518		4040776	44 3	4199802	
51	3559227		3721780		3883199		4043437		4202442	
52	3561945		3724480		3885880		4046097		4205081	
53	3564663		3727179		3888560		4048757		4207720	
54	3567380		3729878		3891240		4051416		4210359	
55	3570097		3732577		3893919		4054075		4212997	
56	3572814		3735275		3896598	44 6	4056734		4215635	
57	3575531		3737973		3899277		4059392		4218273	
58	3578247		3740671		3901955		4062050		4220910	
59	3580963		3743369		3904633		4064708		4223547	43 9
60	3583679		3746066		3907311		4067366		4226183	

G. m	25 Sinus	portio uni9 ĩ 10	26 Sinus	portio uni9 ĩ 10	27 Sinus	portio uni9 ĩ 10	28 Sinus	portio uni9 ĩ 10	29 Sinus	portio unius ĩ 10.
0	4226583	43 9	4383712	43 6	4539905	43 2	4694716	42 8	4848096	42 4
1	4228819		4386326		4542497		4697284		4850640	
2	4231455		4388940		4545088		4699852		4853184	
3	4234090		4391554		4547679		4702419		4855727	
4	4236725		4394167		4540270		4704986		4858270	
5	4239360		4397780	43 5	4552860		4707553		4860812	
6	4241994		4399392		4555450		4710119		4863354	
7	4244628		4402004		4558039		4712685		4865895	
8	4245272		4404616		4560628	43 1	4715250		4868436	42 3
9	4249895		4407227		4563216		4717815	42 7	4870977	
10	4252528		4409838		4565804		4720380		4873517	
11	4255161		4412449		4568392		4722944		4876057	
12	4257793		4415059		4570979		4725508		4878596	
13	4260425		4417669		4573566		4728071		4881135	
14	4263056		4420278		4576153		4730634		4883674	
15	4265687		4422887		4578739		4733197		4886212	
16	7268318	43 8	4425496		4581325		4735759		4888750	
17	4270949		4428104		4583911		4738321		4891287	
18	4273579		4430712		4586496		4740882		4893824	
19	4276209		4433320		4589031		4743443		4896361	
20	4278838		4435927		4591665		4746004		4898897	
21	4281467		4438534	43 4	4594249		4748564		4901433	
24	4274096		4441140		4596833		4751124		4903968	
23	4286724		4443746		4599416		4753683		4906503	42 2
24	4289352		4446352		4601999	43 0	4756242	42 6	4909037	
25	4291979		4448957		4604581		4758801		4911571	
26	4294606		4451552		4607163		4761359		4914105	
27	4297233		4454167		4609744		4763917		4916638	
28	4299859		4456771		4612325		4766474		4919171	
29	4302485		4459375		4614906		4769031		4921703	
30	4305111		4461978		4617486		4771588		4924235	
31	4307736		4464581		4620066		4774144		4926767	
32	4310361	43 7	4457184		4622646		4776700		4929298	
33	4312986		4469786		4625225		4779255		4931829	
34	4315610		4472388		4627804		4781810		4934359	
35	4318234		4474990		4630382		4784365		4936889	
36	4320858		4477591		4632960		4786919		4939418	
37	4323481		4480192	43 3	4635538		4789473		4941947	42 1
38	4326104		4482792		4638115		4792026		4944476	
39	4328726		4485392		4640692	42 9	4794579	42 5	4947004	
40	4331348		4487992		4643268		4797132		4949532	
41	4333970		4490591		4645844		4799684		4952059	
42	4336591		4493190		4648420		4802236		4954586	
43	4339212		4495788		4650995		4804787		4957113	
44	4341833		4498386		4653570		4807338		4959639	
45	4344453		4500984		4656145		4809888		4962165	
46	4347073		4503582		4658719		4812438		4954690	
47	4349693		4506179		4661293		4814988		4967215	
48	4352312		4508776		4663866		4817537		4969740	
49	4354931	43 6	4511372		4666439		4820086		4972264	
50	4357549		4513968		4669012		4822635		4974788	
51	4360167		4516563		4671584		4825183		4977311	
52	4362785		4519158	43 2	4674156		4827731		4979834	42 0
53	4365402		4521753		4676727		4830278		4982356	
54	4368019		4524347		4679298	42 8	4832825	42 4	4984878	
55	4370635		4516941		4671869		4835371		4987399	
56	4373251		4529535		4684439		4837917		4989920	
57	4375867		4532128		4687009		4840462		4992441	
58	4378482		4534721		4689578		4843007		4994961	
59	4381097		4537313		4692147		4845552		4997481	
60	4383712		4539905		4694716		4848096		5000000	

G. m.	30 Sinus	portio unius 2 10	31 Sinus	portio unius 2 10	32 Sinus	portio unius 2 10	33 Sinus	portio unius 2 10	34 Sinus	Portio unius secūdi 10
0	5000000	42 0	5150381	41 6	5299192	41 1	5446390	40 7	5591929	40 2
1	5002519		5152874		5301659		5448829		5594340	
2	5005038		5155367	41 5	5304125		5451268	40 6	5595751	
3	5007556		5157859		5306591		5453707		5599161	
4	5010074		5160351		5309056		5456145		5601571	
5	5012591		5162843		5311521		5458583		5603981	
6	5015108	41 9	5165334		5313985		5461020		5606390	40 1
7	5017624		5167825		5316449		5463456		5608798	
8	5020190		5170315		5318913		5465802		5611206	
9	5022656		5172805		5321376		5468328		5613614	
10	5025171		5175294		5323839	41 0	5470763		5616021	
11	5027686		5177783		5326301		6473198		5618427	
12	5030200		5180271		5328763		5475632		5620833	
13	5032714		5182759		5331224		5478066		5623239	
14	5035227		5185246		5333685		5480499		5625644	
15	5037740		5187733	41 4	5336145		5482932	40 5	5628049	
16	5040253		5190220		5338605		5485364		5630453	
17	5042765		5192706		5341065		5487796		5632857	
18	5045277		5195192		5343524		5490228		5635260	
19	5047783	41 8	5197667		5345983		5492659		5637663	40 0
20	5050299		5200162		5348441		5495090		5640056	
21	5052809		5202646		5350898		6497520		5642468	
22	5055319		5205130		5353355	40 9	5499950		5644869	
23	5057829		5207614		5355812		5502379		5647270	
24	5060338		5210097		5358268		5504808		5649670	
25	5062847		5212580		5360724		5507236		5652070	
26	5065355		5215062		5363179		5509664		5674469	
27	5067863		5217544		5365634		5512091		5656868	
28	5070370		5220025		5368088		5514518	40 4	5659266	
29	5072877		5222506	41 3	5370542		5516944		5661664	
30	5075384		5224986		5372996		5519370		5664061	
31	5077890		5227466		5375449		5521795		5666459	
32	5080396		5229946		5377902		5524220		5668856	39 9
33	5082901		5232425		5380354		5526645		5671252	
34	5085406	41 7	5234904		5382806		5529069		5673648	
35	5087911		5237382		5385258		5531493		5676043	
36	5090415		5239860		5387709	40 8	5533916		5678438	
37	5092919		5242337		5390159		5536338		5680832	
38	5095422		5244614		5392609		5538760		5683226	
39	5097925		5247290		5395058		5541182		5685619	
40	5100427		5249766		5397507		5543603		5688012	
41	5102929		5252241		5399855		5546024	40 3	5690404	
42	5105430		5254716	41 2	5402403		5548444		5692796	
43	5107931		5257191		5404851		5550864		5695187	
44	5110431		5259665		5407298		5553283		5697578	39 8
45	5112931		5262139		5409745		5555702		5699968	
46	5115431		5264612		5412191		5558120		5702358	
47	5117930		5267085		5415637		5560538		5704747	
48	5120429	41 6	5269557		5417082		5562956		5707136	
49	5122927		5272029		5419527	40 7	5565373		5709524	
50	5125425		5274501		5421972		5567790		5711912	
51	5127922		5276972		5424416		5570206		5714269	
52	5130419		5279443		5426859		5572622		5716686	
53	5132916		5281913		5429302		5575037		5719072	
54	5135412		3284383		5431745		5577452	40 2	7721458	
55	5137908		5286852		5434187		5579866		5723844	
56	5140403		5299321	41 1	5436629		5582280		5726229	39 7
57	5142898		5291789		5439070		5584693		5728613	
58	5145393		5294257		5441510		5587106		5730997	
59	5147887		5296725		5443959		5589518		5733381	
60	5150381		5299192		5446390		5591929		5735764	

G. m.	35 Sinus	portio unius $\bar{2}$ 10	36 Sinus	portio unius $\bar{2}$ 10	37 Sinus	portio unius $\bar{2}$ 10	38 Sinus	portio unius $\bar{2}$ 10	39 Sinus	portio unius $\bar{2}$ 10
0	5735764	39 7	5877852	39 2	6018150	38 7	6156615	38 2	6293204	37 7
1	5738147		5880205		6020473		6158907		6295464	
2	5740529		5882558		6022796		6161198		6297725	
3	5742911		5884910		6025118		6163489		6299983	37 6
4	5745292		5887262		6027439		6165781		6302242	
5	5747672		5889613		6029750		6168070		6304501	
6	5750052		5891964		6032080		6170259	38 1	6306759	
7	5752432		5894314		6034400		6172648		6309016	
8	5754811		5896664		6036719		6174936		6311273	
9	5757190	39 6	5899013	39 1	6039038	38 6	6177224		6313529	
10	5759568		5991361		6041357		6179512		6315784	
11	5761945		5903709		6043675		6181799		6318039	
12	5764323		5905056		6045992		6184085		6320293	
13	5766700		5908403		6048309		6186371		6322547	
14	5769076		5910750		6050625		6188656		6324800	
15	5771452		5913096		6052940		6190940		6327053	37 5
16	5773827		5915442		6055255		6193224		6329305	
17	5776202		5917787		6057570		6195508		6331557	
18	5778576		5920132		6059884		6197791		6333808	
19	5780950		5922476		6062198		6200074	38 0	6336059	
20	5783324		5924820		6064511		6202350		6338310	
21	5785691	39 5	5927163	39 0	6066824	38 5	6204638		6340560	
22	5788069		5929505		6069136		6206919		6342809	
23	5790441		5931847		6071448		6209199		6345058	
24	5792812		5934189		6073759		6211479		6347309	
25	5795183		5936530		6076069		6213758		6349553	
26	5797553		5938871		6078379		6216037		6351800	37 4
27	5799923		5941211		6080688		6218315		6354046	
28	5802292		5943551		6082997		6220593		6356292	
29	5804661		5945890		6085306		6222870	37 9	6358537	
30	5807030		5948228		6087614		6225146		6360782	
31	5809398		5950566		6089922		6227422		6363026	
32	5811766		5952904		6092229		6229698		6365270	
33	5814133	39 4	5955241		6094536	38 4	6231973		6367513	
34	5816499		5957578	38 9	6096842		6234248		6369756	
35	5818865		5959914		6099147		6236522		6371999	
36	5821230		5962250		6091452		6238796		6374241	
37	5823595		5964585		6103756		6241069		6376482	37 3
38	5825959		5966919		6106060		6243342		6378722	
39	5828323		5969253		6108364		6245614		6380962	
40	5830687		5971586		6110667		6247885		6383201	
41	5833050		5973919		6112970		6250156	37 8	6385440	
42	5835412		5976251		6115272		6252426		6387678	
43	5837774		5978583		6117573	38 3	6254696		6389916	
44	5840136		5980915		6119873		6256966		6392152	
45	5842497		5983246		6122173		6259235		6394390	
46	5844858	39 3	5985577	38 8	6124473		6261503		6396626	
47	5847218		5987907		6126772		6263771		6398862	
48	5849578		5990237		6129071		6266038		6401097	
49	5851937		5992566		6131369		6268305		6403332	37 2
50	5854295		5994894		6133667		6270572		6405569	
51	5856653		5997222		6135964		6272838		6407799	
52	5859010		5999549		6138261		6275103		6410032	
53	5861367		6001876		6140557		6277368	37 7	6412264	
54	5863724		6004202		6143853		6279632		6414496	
55	5866080		6006528		6145148	38 2	6281895		6416728	
56	5868436		6008853		6147442		6284158		6418959	
57	5870791	39 2	6011178	38 7	6149746		6286420		6421189	
58	5873145		6013502		6152030		6288682		6423419	
59	5875499		6015826		6154323		6290943		6425643	37 1
60	5877852		6018150		6156615		6293204		6427876	

G. 40		41		42		43		44		
m.	Sinus	portio uniꝰ ĩ 10	Sinus	portio uniꝰ ĩ 10	Sinus	portio uniꝰ ĩ 10	Sinus	portio uniꝰ ĩ 10	Sinus	Portio uniꝰ secũdi 10
0	6427876	37 1	6560590	36 6	6691306	36 0	6819984	35 5	6946584	34 9
1	6430104		6562785		6693468		6822111	35 4	6948676	
2	6432331		6564979		6695629		6824237		6950767	
3	6434558		6567173		6697789		6826363		6952858	
4	6436785		6569367		6699949		6828489		6954949	34 8
5	6439011		6571560		6702108		6830614		6957039	
6	6441236		6573753	36 5	6704267		6832738		6959128	
7	6443461		6575945		6706425		6834861		6961216	
8	6445685		6578136		6708582		6836984		6963304	
9	6447909		6580326		6710739	35 9	6839107		6965392	
10	6450132		6582516		6712895		6841229		6967479	
11	6452355	37 0	6584705		6715051		6843350		6969565	
12	6454577		6586894		6717206		6845471	35 3	6971651	
13	6456799		6589082		6719361		6847591		6973736	34 7
14	6459020		6591270		6721515		6849711		6975821	
15	6461240		6593458		6723668		6851830		6977905	
16	6463460		6595645	36 4	6725821		6853949		6979988	
17	6465679		6597831		6727973		6856067		6982071	
18	6467898		6600016		6730125		6858184		6984153	
19	6470116		6602201		6732276		6860301		6986235	
20	6472333		6604386		6734427	35 8	6862417		6988316	
21	6474550	36 9	6606570		6736577		6864533		6990396	
22	6476766		6608753		6738726		6866648	35 2	6992476	
23	6478982		6610936		6740875		6868762		6994555	
24	6481198		6613118		6743024		6870876		6996634	34 6
25	6483413		6615300		6745172		6872989		6998712	
26	6485628		6617481	36 3	6747319		6875102		7000789	
27	6487842		6619661		6749465		6877214		7002866	
28	6490055		6621841		6751611		6879325		7004942	
29	6492258		6624021		6753757		6881436		7007018	
30	9494480		6626200		6755902		6883546		7009093	
31	6496692		6628379		6758047	35 7	6885656		7011167	
32	6498903		6630557		6760191		6887765		7013241	
33	6501114	36 8	6632734		6762334		6888974	35 1	7015314	
34	6503324		6634911		6764477		6891982		7017387	34 5
35	6505533		6637087		6766619		6894089		7019459	
36	6507742		6639263		6768760		6896196		7021530	
37	6509950		6641438	36 2	6770901		6898302		7023601	
38	6512158		6643612		6773041		6900408		7025671	
39	6514365		6845786		6775181		6902513		7027741	
40	6516572		6647959		6777320		6904617		7029810	
41	6518778		6650132		6779459	35 6	6906721		7031879	
42	6520984		6652304		6781597		6908824		7033947	
43	6523189		6654476		6783734		6910927	35 0	7036014	
44	6525394	36 7	6656647		6785871		6913029		7038081	34 4
45	6527598		6658817		6788007		6915131		7040147	
46	6529801		6660987		6790143		6917232		7042213	
47	6532004		6663156		6792278		6919332		7044278	
48	6534206		6665325	36 1	6794413		6921432		7046342	
49	6536408		666-493		6796547		6923531		7048406	
50	6538609		6669661		6798681		6925630		7050469	
51	6540809		6671828		5800814	35 5	6927728		7052532	
52	6543009		6673994		6802946		6929825		7054594	
53	6545208		6676160		6805078		6931922	34 9	7056655	
54	6547407	36 6	6678326		6807209		6934018		7058716	34 3
55	6549606		6680491		6809340		6936114		7060776	
56	6551804		6682655		6811470		6938209		7062836	
57	6554001		6684818		6813599		6940303		7064895	
58	6556198		6686981		6815728		6942397		7069653	
59	6558394		6689144	36 0	6817856		6944491		7060911	
60	6560590		6691306		6819984		6946584		7071068	

G. m.	45 Sinus	portio uniꝰ 2 10	46 Sinus	portio uniꝰ 2 10	47 Sinus	portio uniꝰ 2 10	48 Sinus	portio uniꝰ 2 10	49 Sinus	portio unius 2 10.
0	7071068	34 3	7193398	33 7	7313537	33 1	7431448	32 4	7547096	31 8
1	7073125		7195418		7315521		7433394		7549004	
2	7075181		7197438		7317504	33 0	7435339		7550911	
3	7077236		7199457		7319486		7437284		7552818	
4	7079291	34 2	7201476	33 6	7321468		7439229		7554724	
5	7081345		7203494		7323449		7441173		7556630	
6	7083399		7205511		7325429		7443116		7558535	31 7
7	7085452		7207527		7327409		7445058		7560439	
8	7087504		7209543		7329388		7447000		7562343	
9	7089556		7211559		7331367		7448941		7564246	
10	7091607		7213574		7333345		7450882	32 3	7566147	
11	7093658		7215588		7335322	32 9	7452822		7568050	
12	7095708		7217601		7337298		7454761		7569951	
13	7097757		7219614	33 5	7339274		7456699		7571851	
14	7099806	34 1	7221627		7341250		7458637		7573751	
15	7101854		7223639		7343225		7460574		7575650	31 6
16	7103902		7225651		7345199		7462511		7577548	
17	7105949		7227662		7347173		7464447		7579446	
18	7107995		7229672		7349145		7466382		7581343	
19	7110041		7231681		7351118		7468317	32 2	7583240	
20	7112086		7233689		7353090		7470251		7585136	
21	7114131		7235697		7355061	32 8	7472184		7587031	
22	7116175		7237704		7357031		7474117		7588925	
23	7118218		7239711	33 4	7359001		7476049		7590819	
24	7120261	34 0	7241718		7360970		7477981		7592713	
25	7122303		7243724		7362939		7479912		7594606	31 5
26	7124344		7245729		7364907		7481842		7596498	
27	7126385		7247733		7366874		7483771		7598389	
28	7128425		7249737		7368841		7485700	32 1	7600280	
29	7130465		7251741		7370807		7487629		7602170	
30	7132504		7253744		7372773		7489557		7604060	
31	7134543		7255746		7374738	32 7	7491484		7605949	
32	7136581		7257747		7376702		7493410		7607837	
33	7138618		7259748		7378666		7495336		7609725	
34	7140655	33 9	7261749	33 3	7380629		7497262		7611612	31 4
35	7142691		7263749		7382592		7499187		7613498	
36	7144727		7265748		7384554		7501111		7615384	
37	7146762		7267746		7386515		7503034		7617269	
38	7148796		7269744		7388475		7504957	32 0	7619153	
39	7150830		7271741		7390435		7506879		7621037	
40	7152863		7273737		7392394		7508801		7622920	
41	7154895		7275733		7394353	32 6	7510722		7624802	
42	7156927		7277728	33 2	7396311		7512642		7626683	
43	7158958		7279722		7398268		7514561		7628564	31 3
44	7160989	33 8	7281716		7400225		7516480		7630445	
45	7163019		7283710		7402181		7518398		7632325	
46	7165049		7285703		7404137		7520316		7634204	
47	7167078		7287695		7406092		7522233	31 9	7636082	
48	7169106		7289687		7408045		7524149		7637960	
49	7171134		7291678		7410000		7526065		7639838	
50	7173161		7293668		7411953	32 5	7527980		7641715	
51	7175187		7295658		7413905		7529894		7643591	
52	7177213		7297647	33 1	7415856		7531808		7645466	
53	7179238		7299635		7417807		7533721		7647341	31 2
54	7181263	33 7	7301623		7419758		7535634		7649215	
55	7183287		7303610		7421708		7537546		7651088	
56	7185310		7305597		7423657		7539457	31 8	7652961	
57	7187333		7307583		7425605		7541367		7654833	
58	7189355		7309568		7427553		7543277		7656704	
59	7191377		7311553		7429501		7545187		7658575	
60	7193398		7313537		7431448	32 4	7547096		7660445	

G. m.	50 Sinus	portio unig 2 10	51 Sinus	portio unig 2 10	52 Sinus	portio unig 2 10	53 Sinus	portio unig 2 10	54 Sinus	Portio unig secūdi 10
0	7660445	31 2	7771460	30 5	7880108	29 8	7986355	29 2	8090170	28 5
1	7662314		7773290		7881898		7988105		8091879	
2	7664183	31 1	7775120		7883688		7989855		8093588	
3	7666051		7776949		7885477		7991604	29 1	8095296	
4	7667919		7778777		7887266		7993352		8097004	
5	7669786		7780605		7889054		7995100		8098711	28 4
6	7671652		7782432	30 4	7890841		7996847		8100417	
7	7673517		7784258		7892627		7998593		8102122	
8	7675382		7786084		7894413		8000339		8104827	
9	7677246		7787909		7896198		8002084		8105531	
10	7679110		7789733		7897983	19 7	8003828		8107234	
11	7680973	31 0	7791557		7899767		8005571		8108936	
12	7682835		7793380		7901550		8007314	29 0	8110638	
13	7684687		7795202		7903333		8009056		8112339	
14	7686559		7797024		7905116		8010797		8114040	28 3
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32	7719945		7829762		7937073		8042028		8144532	
33	7721794		7831511		7938842		8043757		8146220	
34	7723642		7833330	30 1	7940511		8045485		8147907	
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G. m.	55 Sinus	portio uniǫ 10	56 Sinus	portio uniǫ 10	57 Sinus	portio uniǫ 10	58 Sinus	portio uniǫ 10	59 Sinus	portio unius 10
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2	8194855		8293628		8389873		8483562		8574668	24 9
3	8195522		8295253		8391456		8485102		8576164	
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9	8206508		8304987		8400935		8494325		8585127	
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3	8664515		8750425		8833569		8914023		8991762	
4	8666057		8751833		8834932		8915341		8993035	
5	8667518		8753240	23 4	8836295		8916659		8994307	
6	8668968		8754646		8837657		8917976	21 9	8995578	
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30	8703557		8788171	23 1	8870108		8949344	21 6	9025853	
31	8704989		8789559		8871451		8950642		9027105	
32	8706420		8790946		8872793		8951939		9028356	20 8
33	8707851	23 8	8792332		8894134		8953235		9029606	
34	8709281		8793717		8875475	22 3	8954530		9030856	
35	8710710		8795102		8876815		8955824		9032105	
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37	8713565		8797869	23 0	8879492		8958410	21 5	9034600	
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41	8719269	23 7	8803394		8884838	22 2	8903575		9039582	
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43	8722116		8806152		8887506		8966152		9042068	
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47	8727801		8811659		8892833		8971299		9047031	
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57	8741964	23 5	8825375		8905099		8984111		9059387	
58	8743376		8826743		8907422	22 0	8985388		9060618	
59	8744787		8828110		8908744		8986664		9061848	
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6	9070441		9142540	19 6	9211855		8278363		9342045	
7	9071665		9143718		9212986		9279448		9343082	
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17	9083866		9155457		9224259		9290250	17 9	9353411	
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24	9092362		9163628		9232103		9497766	17 8	9360595	
25	9093572		9164792		9233220		9298836		9361618	17 0
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29	9098406		9169440		9237682		9303109		9365703	
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31	9100819		9171761		9239908	18 5	9305242		9367740	
32	9102024		9172920		9241020		9306307	17 7	9368758	
33	9103228		9174078		9242131		9307371		9369775	16 9
34	9104432		9175235		9243242		9308434		9370791	
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37	9108038		9178702	19 2	9246569		9311620		9373834	
38	9109238		9179856		9247676	18 4	9312680		9374847	
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42	9114032		9184464		9252097		9316913		9378889	
43	9115229	19 9	9185614		9253200		9317969		9379898	
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46	9118814		9189060		9256506	18 3	9321133		9332919	
47	9120007		9190207		9257606		9322186	17 5	9383925	
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49	9122392		9192499		9259805		9324290		9385934	
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57	9131902		9201635		9268566		9332673		9393938	
58	9133087	19 7	9202774		9269658		9333717		9394935	
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G. m.	70 Sinus	portio uni9 ī 10	71 Sinus	portio uni9 ī 10	72 Sinus	portio uni9 ī 10	73 Sinus	portio uni9 ī 10	74 Sinus	Portio unig secūdi 10
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4	9400900		9458968		9514155		9566444		9615818	
5	9401891		9459911		9515050		9567291		9616616	
6	9402882		9460854		9515944		9568137		9617413	
7	9403872		9461796		9516838		9568982		9618209	
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11	9407822		9465555	15 6	9520404		9572355		9621387	
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13	9409793		9467430		9522183		9574036		9622971	
14	9410777		9468366		9523071		9574875		9623762	
15	9411760		9469301		9523958		9575714		9624552	
16	9412742		9470236		9524844		9576552		9625341	13 1
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18	9414705	16 3	9472103	15 5	9526615	14 7	9578225		9626917	
19	9415685		9473035		9527499		9579061		9627704	
20	9416665		9473967		9528382		9579896		9628490	
21	9417644		9474898		9529264		9580730		9629275	
22	9418622		9475828		9530146		9581563		9630059	
23	9419599		9476757		9531027		9582395		9630843	
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26	9422525	16 2	9479539	15 4	9533664		9684887		9633189	
27	9423499		9480465		9534541		9585716		9633969	
28	9424472		9481390		9535418		9586544		9634748	
29	9425444		9482314		9536294		9587371		9635527	
30	9426415		9483237		9537169		9588197		9636305	
31	9427386		9484160		9538043		9589023		9637082	12 9
32	9428356		9485082		9538917		9589848	13 7	9637858	
33	9429325	16 1	9486003	15 3	9539790	14 5	9590672		9638633	
34	9430293		9486923		9540662		9591495		9639408	
35	9431260		9487842		9541533		9592318		9640182	
36	9432227		9488761		9542403		9593140		9640955	
37	9433193		9489679		9543272		9593961		9641727	
38	9434158		9490596		9544141		4594781		9642498	12 8
39	9435122		9491512		9545009		9595600		9643268	
40	9436085		9492427	15 2	9545876	14 4	9596419	13 6	9644038	
41	9437048	16 0	9493341		9546742		9597237		9644807	
42	9438010		9494255		9547607		9598054		9645575	
43	9438971		9495168		9548472		9598870		9646342	
44	9439931		9496080		9549336		9599685		9647108	
45	9440890		9496991		9550199		9600499		9647873	
46	9441849		9497902		9551061		9·01313		9648638	12 7
47	9442807		9498812		9551922		9502126	13 5	9649402	
48	9443764	15 9	9499721	15 1	9552783	14 3	9502938		9650165	
49	9444720		9500629		9553643		9603749		9650927	
50	9445676		9501536		9554502		9604559		9651689	
51	9446631		9502443		9555360		9605368		9652450	
52	9447585		9503349		9556217		9606177		9653210	
53	9448538		9504254		9557074		9606985		9653969	12 6
54	9449490		9505158		9557930		9607792	13 4	9654727	
55	9450441		9506061	15 0	9558785	14 2	9608598		9655484	
56	9451392	15 8	9506963		9559639		9609403		9656240	
57	9452342		9507865		9560492		9610208		9656996	
58	9453291		9508766		9561345		9611012		9657751	
59	9454239		9509666		9562197		9611815		9 658505	
60	9455186		9510565		9563048		9612617		9 659258	

G. m̄	75 Sinus	portio uniꝰ 2/10	76 Sinus	portio uniꝰ 2/10	77 Sinus	portio uniꝰ 2/10	78 Sinus	portio uniꝰ 2/10	79 Sinus	portio unius 2/10
0	9659258	12 6	9702957	11 7	9743700	10 9	9781476	10 1	9816272	9 3
1	9660011	12 5	9703660		9744355		9782080		9816827	9 2
2	9660763		9704363		9745008		9782684		9817381	
3	9661514		9705065		9745660		9783287	10 0	9817934	
4	9662264		9705766		9746312		9783889		9818486	
5	9663013		9706466		9746963	10 8	9784490		9819037	
6	9663761		9707165	11 6	9747613		9785090		9819587	
7	9664508		9707863		9748262		9785689		9820137	
8	9665255	12 4	9708561		9748910		9786288		9820686	9 1
9	9666001		9709258		9749557		9786886		9821234	
10	9666746		9709954		9750203		9787483	9 9	9821781	
11	9667490		9710649		9750849		9788079		9822227	
12	9668233		9711343		9751494	10 7	9738674		9822872	
13	9668976		9712036		9752138		9789268		9823417	
14	9659718		9712729	11 5	9752781		9789862		9823961	
15	9670459	12 3	9713421		9753423		9790455		9824504	9 0
16	9671199		9714112		9754065		9791047		9825046	
17	9671938		9714802		9754706		9791638	9 8	9825587	
18	9672677		9715491		9755346		9792228		9826128	
19	9673415		9716180		9755985	10 6	9792818		9826668	
20	9674152		9716868		9756623		9793407		9827207	
21	9674888		9717555	11 4	9757260		9793995		9827745	
22	9675623	12 2	9718241		9757897		9794582		9828282	8 9
23	9676357		9718926		9758533		9795168		9828818	
24	9677091		9719610		9759168		9795753	9 7	9829354	
25	9677824		9720294		9759802		9796337		9829889	
26	9678556		9720977		9760435	10 5	9796921		9830423	
27	9679287		9721659		9761067		9797504		9830956	
28	9680017		9722340	11 3	9761699		9798086		9831488	
29	9680747		9723020		9762330		9798667		9832019	8 8
30	9681476	12 1	9723699		9762960		9799247		9832549	
31	9682204		9724378		9763589		9799827		9833079	
32	9682931		9725056		9764217		9800406	9 6	9833608	
33	9683657		9725733		9764845		9800984		9834136	
34	9684383		9726409		9765472	10 4	9801561		9834663	
35	9685108		9727085		9766098		9802137		9835189	
36	9685832		9727760	11 2	9766723		9802712		9835714	
37	9686555	12 0	9728434		9767347		9803287		9836239	8 7
38	9687277		9729107		9767970		9803861		9836763	
39	9687998		9729779		9768593		9804434	9 5	9837286	
40	9688719		9730450		9769215		9805006		9837808	
41	9689439		9731120		9769836	10 3	9805577		9838329	
42	9690158		9731789		9770456		9806147		9838850	
43	9690876		9732458	11 1	9771075		9806716		9839370	
44	9691593	11 9	9733126		9771693		9807285		9839889	8 6
45	9692309		9733793		9772311		9807853		9840407	
46	9693025		9734459		9772928		9808420	9 4	9840924	
47	9693740		9735124		9773544		9808986		9841440	
48	9694454		9735789		9774159	10 2	9809551		9841956	
49	9695167		9736453		9774773		9810116		9842471	
50	9695879		9737116	11 0	9775387		9810680		9842985	
51	9696590		9737778		9776000		9811243		9843498	8 5
52	9697301	11 8	9738439		9776612		9811805		9844010	
53	9698011		9739099		9777223		9812366	9 3	9844521	
54	9698720		9739759		9777833		9812926		9845032	
55	9699428		9740418		9778442	10 1	9813486		9845542	
56	9700135		9741076		9779050		9814045		9846051	
57	9700842		9741733	10 9	9779658		9814603		9846559	
58	9701548		9742389		9780265		9815160		9847066	8 4
59	9702253	11 7	9743045		9780871		9815716		9847572	
60	9702957		9743700		9781476		9816272		9848078	

G. m.	70 Sinus	portio uni9 ī 10	71 Sinus	portio uni9 ī 10	72 Sinus	portio uni9 ī 10	73 Sinus	portio uni9 ī 10	74 Sinus	Portio unig secūdi 10
0	9396926	16 6	9455186	15 8	9510565	15 0	9563048	14 2	9612617	13 4
1	9397921		9456133		9511464		9563898		9613418	
2	9398915		9457079		9512362		9564747		9614219	13 3
3	9399908	16 5	9458024	15 7	9513259	14 9	9565596	14 1	9615019	
4	9400900		9458968		9514155		9566444		9615818	
5	9401891		9459911		9515050		9567291		9616616	
6	9402882		9460854		9515944		9568137		9617413	
7	9403872		9461796		9516838		9568982		9618209	
8	9404861		9462737		9517731		9569826		9619005	
9	9405849		9463677		9518623		9570670		9619800	13 2
10	9406836	16 4	9464616		9519514	14 8	9571513	14 0	9625094	
11	9407822		9465555	15 6	9520404		9572355		9621387	
12	9408808		9466493		9521294		9573196		9622179	
13	9409793		9467430		9522183		9574036		9622971	
14	9410777		9468366		9523071		9574875		9623762	
15	9411760		9469301		9523958		9575714		9624552	
16	9412742		9470236		9524844		9576552		9625341	13 1
17	9413724		9471170		9525730		9577389	13 9	9626129	
18	9414705	16 3	9472103	15 5	9526615	14 7	9578225		9626917	
19	9415685		9473035		9527499		9579061		9627704	
20	9416665		9473967		9528382		9579896		9628490	
21	9417644		9474898		9529264		9580730		9629275	
22	9418622		9475828		9530146		9581563		9630059	
23	9419599		9476757		9531027		9582395		9630843	
24	9420575		9477685		9531907		9583226		9631626	13 0
25	9421550		9478612		9532786	14 6	9584057	13 8	9632408	
26	9422525	16 2	9479539	15 4	9533664		9684887		9633189	
27	9423499		9480465		9534541		9585716		9633969	
28	9424472		9481390		9535418		9586544		9634748	
29	9425444		9482314		9536294		9587371		9635527	
30	9426415		9483237		9537169		9588197		9636305	
31	9427386		9484160		9538043		9589023		9637082	12 9
32	9428356		9485082		9538917		9589848	13 7	9637858	
33	9429325	16 1	9486003	15 3	9539790	14 5	9590672		9638633	
34	9430293		9486923		9540662		9591495		9639408	
35	9431260		9487842		9541533		9592318		9640182	
36	9432227		9488761		9542403		9593140		9640955	
37	9433193		9489679		9543272		9593961		9641727	
38	9434158		9490596		9544141		4594781		9642498	12 8
39	9435122		9491512		9545009		9595600		9643268	
40	9436085		9492427	15 2	9545876	14 4	9596419	13 6	9644038	
41	9437048	16 0	9493341		9546742		9597237		9644807	
42	9438010		9494255		9547607		9598054		9645575	
43	9438971		9495168		9548472		9598870		9646342	
44	9439931		9496080		9549336		9599685		9647108	
45	9440890		9496991		9550199		9600499		9647873	
46	9441849		9497902		9551061		9·01313		9648638	12 7
47	9442807		9498812		9551922		9502126	13 5	9649402	
48	9443764	15 9	9499721	15 1	9552783	14 3	9502938		9650165	
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54	9449490		9505158		9557930		9607792	13 4	9654727	
55	9450441		9506061	15 0	9558785	14 2	9608598		9655484	
56	9451392	15 8	9506953		9559639		9609403		9656240	
57	9452342		9507865		9560492		9610208		9656996	
58	9453291		9508766		9561345		9611012		9657751	
59	9454239		9509666		9562197		9611815		9 658505	
60	9455186		9510565		9563048		9612617		9 659258	

G. m	75 Sinus	portio uni9 ₂ 10	76 Sinus	portio uni9 ₂ 10	77 Sinus	portio uni9 ₂ 10	78 Sinus	portio uni9 ₂ 10	79 Sinus	portio unius ₂ 10
0	9659258	12 6	9702957	11 7	9743700	10 9	9781476	10 1	9816272	9 3
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2	9660763		9704363		9745008		9782684		9817381	
3	9661514		9705065		9745660		9783287	10 0	9817934	
4	9662264		9705766		9746312		9783889		9818486	
5	9663013		9706466		9746963	10 8	9784490		9819037	
6	9663761		9707165	11 6	9747613		9785090		9819587	
7	9664508		9707863		9748262		9785689		9820137	
8	9665255	12 4	9708561		9748910		9786288		9820686	9 1
9	9666001		9709258		9749557		9786886		9821234	
10	9666746		9709954		9750203		9787483	9 9	9821781	
11	9667490		9710649		9750849		9788079		9822327	
12	9668233		9711343		9751494	10 7	9788674		9822872	
13	9668976		9712036		9752138		9789268		9823417	
14	9669718		9712729	11 5	9752781		9789862		9823961	
15	9670459	12 3	9713421		9753423		9790455		9824504	9 0
16	9671199		9714112		9754065		9791047		9825046	
17	9671938		9714802		9754706		9791638	9 8	9825587	
18	9672677		9715491		9755346		9792228		9826128	
19	9673415		9716180		9755985	10 6	9792818		9826668	
20	9674152		9716868		9756623		9793407		9827207	
21	9674888		9717555	11 4	9757260		9793995		9827745	
22	9675623	12 2	9718241		9757897		9794582		9828282	8 9
23	9676357		9718926		9758533		9795168		9828818	
24	9677091		9719610		9759168		9795753	9 7	9829354	
25	9677824		9720294		9759802		9796337		9829889	
26	9678556		9720977		9760435	10 5	9796921		9830423	
27	9679287		9721659		9761067		9797504		9830956	
28	9680017		9722340	11 3	9761699		9798086		9831488	
29	9680747		9723020		9762330		9798667		9832019	8 8
30	9681476	12 1	9723699		9762960		9799247		9832549	
31	9682204		9724378		9763589		9799827		9833079	
32	9682931		9725056		9764217		9800406	9 6	9833608	
33	9683657		9725733		9764845		9800984		9834136	
34	9684383		9726409		9765472	10 4	9801561		9834663	
35	9685108		9727085		9766098		9802137		9835189	
36	9685832		9727760	11 2	9766723		9802712		9835714	
37	9686555	12 0	9728434		9767347		9803287		9836239	8 7
38	9687277		9729107		9767970		9803861		9836763	
39	9687998		9729779		9768593		9804434	9 5	9837286	
40	9688719		9730450		9769215		9805006		9837808	
41	9689439		9731120		9769836	10 3	9805577		9838329	
42	9690158		9731789		9770456		9806147		9838850	
43	9690876		9732458	11 1	9771075		9806716		9839370	
44	9691593	11 9	9733126		9771693		9807285		9839889	8 6
45	9692309		9733793		9772311		9807853		9840407	
46	9693025		9734459		9772928		9808420	9 4	9840924	
47	9693740		9735124		9773544		9808986		9841440	
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54	9698720		9739759		9777833		9812926		9845032	
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56	9700135		9741076		9779050		9814045		9846051	
57	9700842		9741733	10 9	9779658		9814603		9846559	
58	9701548		9742389		9780265		9815160		9847066	8 4
59	9702253	11 7	9743045		9780871		9815716		9847572	
60	9702957		9743700		9781476		9816272		9848078	

G. m.	80 Sinus	portio uni9 2̄ 10	81 Sinus	portio uni9 2̄ 10	82 Sinus	portio uni9 2̄ 10	83 Sinus	portio uni9 2̄ 10	84 Sinus	Portio unius secũdi 10
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1	9848583		9877338		9903085		9925816		9945523	
2	9849087		9877792		9903489		9926169		9945826	5 0
3	9849590		9878245	7 5	9903892		9926521		9946128	
4	9850092		9878697		9904294		9926873		9946429	
5	9850593	8 3	9879148		9904695		9927224	5 8	9946729	
6	9851093		9879598		9905095		9927574		9947028	
7	9851593		9880048		9905494	6 6	9927923		9947327	
8	9852092		9880497		9905893		9928271		9947625	
9	9852590		9880945		9906291		9928618		9947922	4 9
10	9853087		9881392	7 4	9906688		9928965		9948218	
11	9853533		9881838		9907084		9929311		9948513	
12	9854079		9882283		9907479		9929656	5 7	9948807	
13	9854574	8 2	9882728		9907873		9930000		7949100	
14	9855068		9883172		9908266		9930343		9949393	
15	9855561		9883615		9908659	6 5	9930685		9949685	
16	9856053		9884057		9909051		9931026		9949976	4 8
17	9856544		9884498	7 3	9909442		9931367		9950266	
18	9857035		9884938		9909832		9931707		9950555	
19	9857525		9885378		9910221		9932046	5 6	9950844	
20	9858014	8 1	9885817		9910610		9932384		9951132	
21	9858502		9886255		9910998		9932721		9951419	
22	9858989		9886692		9911385	6 4	9933057		9951705	
23	9859475		9887128		9911771		9933393		9951990	4 7
24	9859961		9887564		9912156		9933728		9952274	
25	9860446		9887999	7 2	9912540		9934062		9952557	
26	9860930		9888433		9912923		9934395	5 5	9952840	
27	9861413	8 0	9888866		9913306		9934727		9953122	
28	9861895		9889298		9913688		9935058		9953403	
29	9862376		9889729		9914069	6 3	9935389		9953683	
30	9862856		9890159		9914449		9935719		9953962	4 6
31	9863336		9890588		9914828		9936048		9954240	
32	9863815		9891017	7 1	9915206		9936376		9954518	
33	9864293		9891445		9915584		9936703	5 4	9954795	
34	9864770	7 9	9891872		9915961		9937029		9955071	
35	9865246		9892298		9916337		9937355		9955346	
36	9865722		9892723		9916712	6 2	9937680		9955 20	
37	9866197		9893147		9917086		9938004		9955893	4 5
38	9866671		9893571		9917459		9938327		9956165	
39	9867144		9893994	7 0	9917832		9938649		9956437	
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